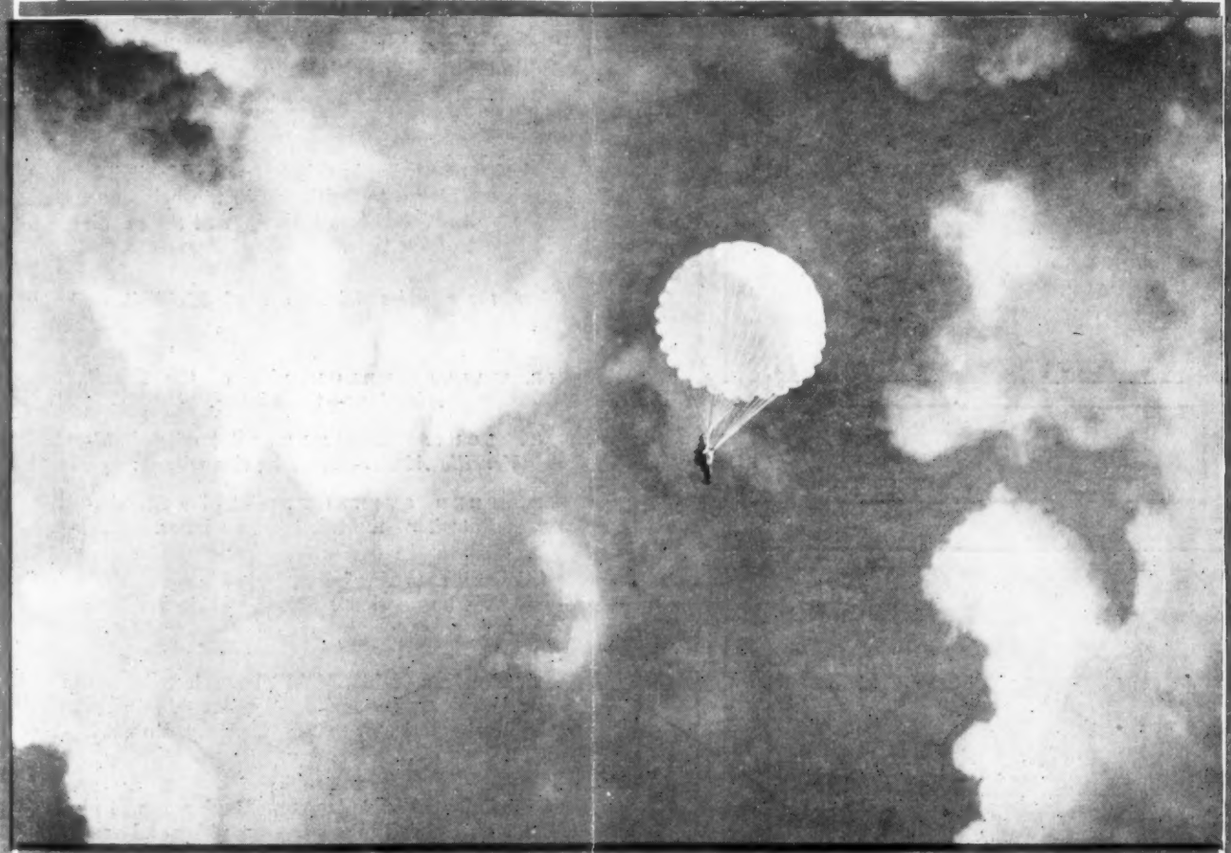
TECHNICAL DEPT.

AVIATION

The Oldest American Aeronautical Magazine

OCTOBER 18, 1926 Issued Weekly PRICE 15 CENTS



Sergt. P. G. Smith of Wilbur Wright Field parachuting at Norton Field, Columbus, O.

Rinehart-Weaver Photo

VOLUME XXI

NUMBER 16

SPECIAL FEATURES

NOTES ON THE PARACHUTE

TESTING AIRCRAFT ON THE SPEED TRIANGLE

THE WATERHOUSE CRUZAIR MONOPLANE

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GARDNER PUBLISHING CO., INC.

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office, at Highland, N. Y. under Act of March 3, 1879.

Ford reliability tests prove Mobiloil reliability

Winner of the Reliability Tour.
Mr. Walter Beech *(left)* standing beside his Travel Air plane

The Second Prize Winner.
Mr. Louis Meister *(left)* and his Buhl-Verville Airster.

First three flyers to finish use Mobiloil exclusively!

THE Second Annual Commercial Reliability Tour demonstrated to thousands of citizens the reliability of the present-day airplane. And it clearly demonstrates to aviators the reliability of Mobiloil.

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The first three prize winners used Mobiloil exclusively. They were:—

MR. WALTER BEECH, pilot of the *Travel Air* plane—the winner.

MR. LOUIS MEISTER, pilot of a *Buhl-Verville Airster*—second prize winner.

MR. FRED STINSON, pilot of a *Stinson-Detroiter*—the third prize winner.

One of the prize winning pilots puts his reason for selecting Mobiloil thus, "We know what Mobiloil will do and that it is the best oil there is."

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OCTOBER 18, 1926

AVIATION

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CONTENTS

Editorials 665

Testing Aircraft on the Speed Triangle..... 666

The Air Mail Fathers Commercial Aviation..... 668

Notes on the Parachute..... 670

The Waterhouse Cruzair Monoplane..... 672

Publisher's News Letter..... 688

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SCINTILLA

AT THE NATIONAL AIR RACES

The Boeing FB-3 piloted by Lt. G. T. Cuddihy

Won the Free-for-All Pursuit Ship Race

Powered with a PACKARD Engine

equipped with

SCINTILLA

The Wright Apache piloted by Lt. C. C. Champion was powered with a PRATT and WHITNEY "WASP"

equipped with

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AIRCRAFT MAGNETOS

SCINTILLA MAGNETO COMPANY, INC.

SIDNEY, N. Y.

WRIGHT WHIRLWIND ENGINES WON *FIRST—SECOND—THIRD*

In the Second Annual Airplane Reliability Tour

August 7th - 21st

Covering 2560 miles over ten States, starting and finishing at Detroit, Mich.

First —"Travel Air," 4-seater, built by Travel Air Mfg. Co., Wichita, Kansas, carrying 600 lbs. contest load, average speed 124.5 m.p.h. Powered with one WRIGHT WHIRLWIND engine.

Second —"Airster," built by Buhl-Verville Aircraft Company, Detroit, Mich., carrying 800 lbs. contest load, average speed 113.5 m.p.h. Powered with one WRIGHT WHIRLWIND engine.

Third —"Detroiter" built by Stinson Aircraft Corp., Northville, Mich., carrying 640 lbs. contest load, average speed 106.7 m.p.h. Powered with one WRIGHT WHIRLWIND engine.

Ryan M-1, built by Ryan Airlines, Inc., San Diego, Calif., carrying 500 lbs. contest load, average speed 111.8 m.p.h. Powered with one WRIGHT WHIRLWIND engine.

Ford 3-engine Airliner, built by the Airplane Division, Ford Motor Company, Dearborn, Mich. Powered with three WRIGHT WHIRLWIND engines.

National Air Races—*Philadelphia, Pa.*

September 4th - 11th

WRIGHT WHIRLWIND *engines won twelve of the eighteen prizes they contested for.*

Air Transport Race—First in Speed and Efficiency, "Wright-Bellanca", powered with one WRIGHT WHIRLWIND engine, carrying 1607 lbs. contest load, average speed 121.53 m.p.h. Second in Speed and Third in Efficiency, Buhl-Verville "Airster" powered with one WRIGHT WHIRLWIND engine, carrying 1059 lbs. contest load, speed 119.97 m.p.h. Third in Speed, Ford 3-engine Airliner, powered with three WRIGHT WHIRLWIND engines, carrying 2666 lbs. contest load, speed 114.26 m.p.h.

Light Commercial Airplane Race—Trophy won by "Wright-Bellanca", powered with one WRIGHT WHIRLWIND engine, carrying 1145 lbs. contest load, speed 121.36 m.p.h. Third in Speed and Efficiency, "Travel Air", powered with one WRIGHT WHIRLWIND engine, carrying 666 lbs. contest load, speed 127.2 m.p.h.

Denver Mile High Air Meet

August 1st - 3rd

First place in Speed Race for over 100 H.P. planes won by Ryan M-1 powered with one WRIGHT WHIRLWIND engine.

First place in 5000 ft. altitude climb for over 100 H.P. planes won by Ryan M-1, powered with one WRIGHT WHIRLWIND engine.

First place—Best General Ship at Meet—won by Ryan M-1, powered with one WRIGHT WHIRLWIND engine.

WRIGHT AERONAUTICAL CORPORATION

PATERSON, N. J., U. S. A.

That's why More Pilots fly them!

OCT 22 1926

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AVIATION

W. LAURENCE LEPAGE, EDITOR
VIRGINIUS E. CLARK
RALPH H. UPSON, CONTRIBUTORS

VOL. XXI | OCTOBER 18, 1926 | No. 16

The Pan-American Flight

THE OFFICIAL announcement that arrangements are being completed for the proposed Pan-American flight of the Army Air Corps and that the five Loening Amphibian planes which are to make the flight will leave San Antonio on or about Dec. 15, is most satisfactory. If all goes well, as it no doubt will, the flight will prove one of the most beneficial undertakings ever carried out by the Air Corps or the former Air Service.

South America offers a wide and profitable field for the development of commercial aviation and it is also not unlikely that certain of the South American republics may represent a potential market for service type airplanes and engines. The European aircraft industries, notably that of Germany, have made a strong bid for the monopoly of the South American market and while American aircraft have been sold in small quantities, there remains a wide field for properly organized salesmanship in that quarter. This fact is probably the most important aspect of the coming Pan-American flight.

The choice of the Loening Amphibian for the flight is particularly favorable for this is a type of plane which has been developed here more than anywhere else in the World and it will, therefore, prove a particular attraction in the Latin Americas. Furthermore, the engines, inverted Libertys, while not by any means up-to-date, certainly have a World-wide reputation of excellence.

From the service standpoint only, the Pan-American flight must undoubtedly provide valuable experience for the officers, under Major H. A. Dargue, who are participating. The flight of 18,500 odd miles cannot fail to bring out points in experience which will be well worth the expense of the undertaking to the War Department. Such activities for the Air Corps in peace time may well be considered to offer one of the best means of keeping up the efficiency of a service which is of such vital importance to the defense of the Nation in time of war.

A Plea for More Aeronautical Education

WITH THE rapid growth of commercial aeronautics, there is much said regarding a possible shortage of pilots when the number of available men who learned to fly during the War becomes low. Frequent pleas are put up for the encouragement of men to take up flying in order that qualified and experienced pilots will be available when the demand comes. Little, however, is said of the possibility of a shortage of mechanics, and, possibly, of airplane designers, even. Certainly the flying schools need every encouragement, but there will be a great demand for other classes of workers in civil aeronautics and the need of training centers for providing instruction in these various fields is becoming more and more important.

There are already several universities and technical institutions throughout the country which provide first class aeronautical training. Only recently, thanks to the generosity and foresight of the Guggenheim Fund, two California institutions have been endowed to enable aeronautical education to be provided. Much, however, can be done by individual colleges and universities on a smaller scale which would be of very vital importance. Just as the elements of the many other engineering fields are studied in colleges prior to students specializing definitely in any one subject, so it would seem that aeronautical engineering could, with great advantage, be included in a more or less elementary manner, in the curriculum of many colleges.

In this respect, it would seem that the numerous aero clubs and N.A.A. chapters throughout the country could do a great deal of good by putting up such a scheme to the educational authorities in their respective districts. At present, it would seem that it is either necessary for a young man to join the Air Corps Reserve and travel sometimes miles away to a training school or to take a regular three or four year course at one of the few universities which at present provide complete aeronautical education.

Air Surveying as an Industry

THERE IS an ever increasing demand for aerial surveying upon a large scale throughout the country. In the past, a very great deal of this work has been carried out by the Army Air Corps but more and more of the business is gradually passing into the hands of civilian operators. It is a very good sign that one of the largest private aerial photographic companies in the country has recently secured a really big air survey contract in the Middle West and is even subcontracting some of the flying operations necessary to a well-known airplane operator.

There is no doubt that there would be even more aerial survey business available if individual airplane operators would equip themselves adequately for this class of business and definitely solicit it. The Navy has recently completed the first part of a tremendous aerial surveying program in Alaska. Why cannot a contract for this work be let to a civilian company? There can be no question that the industry does not possess the experience or the facilities for so important a contract. It is true that the Services have handed over to the industry, in recent years, a great deal of the aerial operations which previously were carried out officially. But, if a contract such as that for this Alaskan survey were let to a responsible company, not only is there the possibility of the costs to the Government department concerned being very much less but the putting of that money into the industry would go a long way to creating a prosperous aerial survey business for the good of the country as a whole.

Testing Aircraft on the Speed Triangle

Description of a Simple Method of Determining the True Airspeed of Aircraft Regardless of the Direction and Velocity of the Wind.

By H. H. BLEE

AS A RESULT of a number of inquiries from fliers regarding some simple method of determining, with a reasonable degree of accuracy, the true airspeed of aircraft, regardless of the direction and velocity of the wind and without an extensive outlay of expensive calibrated test instruments, the author has been prompted to write the following description of a method which has been used quite extensively for this purpose.

General Method

This method of conducting speed trials of aircraft is based on the simple vector triangle principle which is employed in the solution of the familiar problem in aerial navigation of determining the course to be steered to compensate for the component of the wind velocity at right angles to the course required; i.e., setting the course, allowing for wind, as illustrated in Fig. 1. In which case the vector triangle is, of course, a triangle of velocities wherein the three vectors represent, both in magnitude and direction, the velocity of the wind, the airspeed of the craft, and the ground-speed of the craft, the latter being the resultant of the former two.

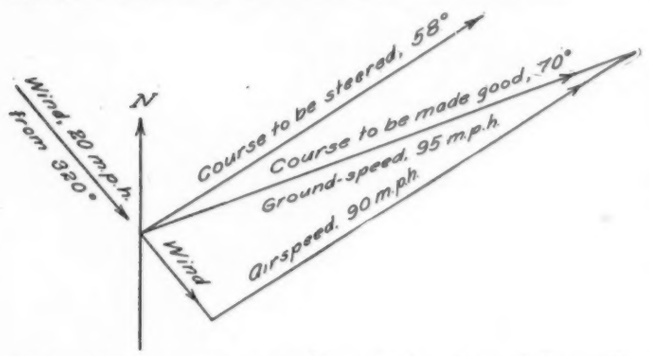


Fig 1. Application of the vector triangle to the solution of the familiar problem in aerial navigation of "setting the course, allowing for wind".

The trials are made over a triangular course, commonly spoken of as the "speed triangle", so selected that the vertices of the triangle and the courses to be followed are easily distinguished by objects readily visible on the ground, such as roads, railroads, fence lines, or other landmarks. In order to reduce the effect of probable errors of observation to a point consistent with the accuracy of the method, the length of each of the three courses of the triangle should be in the neigborhood of from 6 to 8 miles. If accurate maps are available the lengths of the courses may be scaled directly from the maps with sufficient accuracy; otherwise, they should be determined on the ground either by actual measurement or by triangulation. A typical speed triangle, together with its bearing diagram, is shown in Fig. 2. In this connection it should be noted that the bearings are given on the basis of the airplane flying around the triangle in a clockwise direction. Were the flying to be done in the opposite direction the reciprocal bearings would be used in each case.

Test Procedure

The pilot must exercise special care to keep the engine speed constant throughout each test, to keep the machine at constant altitude, and to hold accurately to the course. A bubble statoscope will be found very helpful in keeping the plane at constant altitude. The turn at the end of each leg of the triangle should be made without changing either engine speed or altitude and should be of sufficient radius to permit flying over at least a one-mile extension of the next leg before entering the measured course, in order to insure the machine entering the course at the airspeed corresponding to the given test conditions.

Before leaving the ground the altimeter should be set at zero and observations should be made of the atmospheric temperature and pressure. The observations to be taken during the test, either by the pilot or, if possible, by an observer, include the time over each leg of the triangle, the altitude, the engine speed, the temperature of the atmosphere, and such power plant pressures and temperatures as may be desired. The most satisfactory method of obtaining the temperature of the atmosphere is by means of a strut thermometer of the liquid-in-glass type. As most trials over the speed triangle are made at compartively low altitudes, the timing can be done with sufficient accuracy from the airplane with an ordinary stop watch.

In addition to the data mentioned above, enteries should be made on the test record sheet of all other data pertinent to the test, including the following: make, type, and serial number of the plane; place and date of test; names of pilot and observer; weight of machine and weight of load carried; make, type, rating, and serial number of engine, or engines; make, drawing number, diameter, and pitch of propeller, or propellers; and a general statement of weather conditions.

Graphical Solution

The procedure to be followed in the determination of the true airspeed of the plane from the test data is best explained by the use of a concrete example. For this purpose we will use data representing the test of a certain commercial airplane over the triangular course shown in Fig. 2 (a). In this particular case the time over course AB was 3 min. 49 4/5 sec. (=3.83 min.); the time over course BC was 3 min. 24 3/5 sec. (=3.41 min.); and the time over course CA was 3 min. 48 sec. (=3.80 min.). The first step is to compute the ground-speed (Vg) in miles per hour for each course. This is equal to the length (d) of the course in miles divided by the time (t) and muliplied by 60.

$$(V_g = \frac{d \times 60}{t})$$

Thus, we find that the ground-speed for course AB was 101.7 for the course BC was 128.5 and for course CA was 117.8. Having already constructed a bearing diagram for the speed triangle (Fig. 2 (b)), the next step is to lay off on each of the three bearing lines, measuring from the point 0, a distance representing to a suitable scale (Say 1 in.=10 m.p.h.) the ground-speed over the corresponding course. Thus,

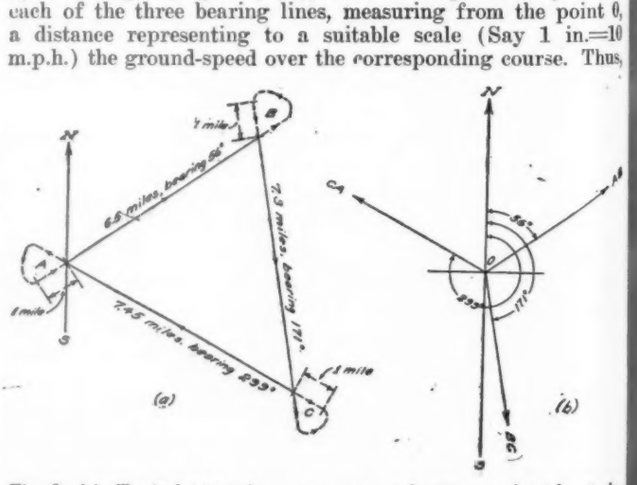


Fig. 2. (a) Typical triangular course for conducting speed trials of aircraft. (b) Bearing diagram for the triangular course shown in (a).

we have OD=10.17 in. OE=12.85 in. and OF=11.78 in. Then connect the three points D, E, and F and erect at the mid-point of each side of the triangle thus formed a perpendicular. These three perpendiculars will intersect in a common point P, which

is equidistant from the three vertices of the triangle. The construction is now completed by drawing the lines OP, PD, PE, and PF. This gives three triangles, OPD, OPE, and OPF, with a common side OP and with PD=PE=PF. These triangles are at once recognized as the velocity triangles for the three courses flown in the speed trial. The common side OP represents in magnitude (to the selected scale) and direction, the average wind velocity over the triangular course at the time of the test, while the three equal sides (PD, PE, and PF) represent, in each case, the true airspeed of the plane under the conditions of the test. It is found by measuring these vectors that the wind was blowing with an average velocity of 16 m.p.h. from a direction of 35 deg. and that the airspeed of the plane was 117 m.p.h.

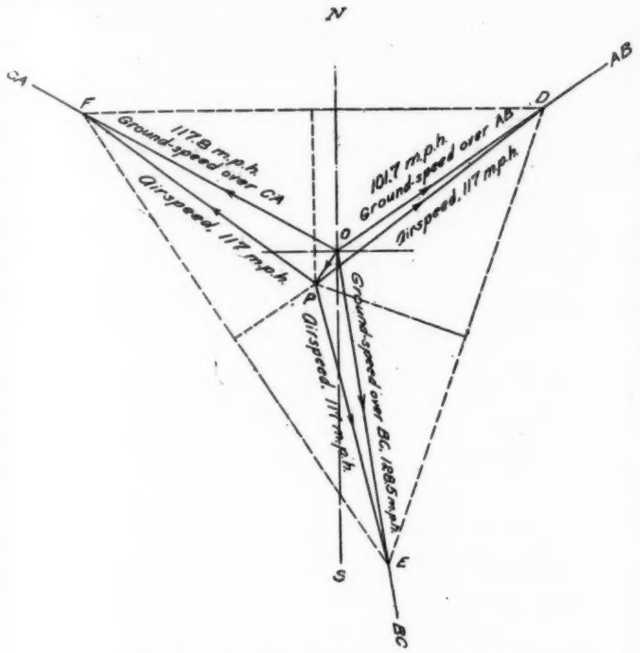


Fig. 3—Vector diagram for the determination of the true airspeed of an aircraft from data on the "speed triangle".

As a check on the results and also in order to minimize the effect of errors of observation it is not uncommon to make several successive circuits of the speed triangle when conducting the test, the result of each circuit being determined separately in the manner illustrated above and the average of the results thus obtained being used as the final result.

Performance Comparisons

Since the observed preformance of an aircraft varies from day to day with changing atmospheric conditions, the results of flight tests should be reduced to standard conditions in order to be truly comparable. (See N.A.C.A. Report No. 216, "The Reduction of Airplane Flight Test Data to Standard Atmosphere Conditions".)

While the method of testing herein described does not give the preformance comparisons to be had from complete flight tests wherein all of the important performance characteristics of the craft are determined; it does make possible the comparison of the true airspeeds for level flight.

Swedish Civil Aviation

The air traffic routes connecting Sweden with the Continent were opened recently when three airplanes commenced the passenger and postal service for the season.

From the Swedish city of Malmo, three main air lines diverge and ramify to form the system of interlocking routes which will carry the brunt of the air traffic to and from Sweden during the present flying season. Under the present arrangements, passengers may reach London, Paris, Zurich, Munich, Vienna or Gleiwitz in one day's flight from Malmo. The principal stations on the three main routes issuing from the base at Malmo are as follows: (1) Hamburg, Amsterdam, London and Paris; (2) Hamburg, Hannover, Frankfurt, Cologne, Stuttgart, Munich and Basel; (3) Lubeck, Berlin, Halle, Dresden and Breslau. Another air line connects Stockholm and Stettin, Germany.

The Swedish air service, in common with other European air lines, is part of an interlocking system, providing relaying connections at important local and terminal points. Connections which the Swedish line established last year with English, Dutch, French and German lines have been extended to include the whole Continent and even Africa. A passenger may start on a Monday morning from Malmo and arrive at Frankfurt in the afternoon, making one change at Hamburg. The next day he may resume the journey to Marseille, over Basle, and on the third day arrive at Casablanca, on the Spanish coast. From that point, the air route touches the Canary Islands, and on the fifth day the passenger arrives on the West coast of Africa at Dakar, Senegal. This route is said to represent the utmost that the present season's connections afford in the way of extension service from Sweden.

According to the present schedule, at least four machines leave Malmo every day at 8:30 a. m. (except Sundays) for European points. The heaviest traffic goes over Copenhagen, it is believed, but a considerable portion of it is directed to the South, depending always on the requirements of passengers.

Various types of machines are utilized in the traffic to and from Malmo. The Swedish Company, Aero Transport, and the German corporation Luft Hansa, use three-engine Junker machines. The French machines are of the Farman type with four Jabiru engines, while the Imperial Airways employ two and three-engine Handley Page planes. The Dutch service is maintained by new Fokker machines, equipped with 580 hp., Jupiter engines.

By special arrangement with the Swedish Government a special customs station has been established on the landing field at the outskirts of Malmo to expedite, without extra charge, the passage of goods or requiring customs examination.

Postal air service between Sweden and the Continent also commenced recently, ordinary first class letters, registered letters, post cards, and third class matter is accepted, as well as uninsured packages weighing not more than 5 kg., no dimensions of which exceeds 60 cm. In addition to the usual postal rates, special fees are charged on air mail irrespective of the country to which addressed.

The Swedish Postal Service has issued special pamphlets containing rates and times for the air mail service. Rates on packages are levied by weight.

Mail to points in Austria, Switzerland, Italy and other European countries not included in the Swedish air mail system of routes are relayed by rail from the nearest air terminal points.

Khartoum-Kenya Air Route Approved

The recent announcement that the British Colonial Office had given its approval to the Khartoum-Kenya aerial route and that the service would become operative within the next six months, has met with widespread approval, in Africa. The formation of this air route is generally regarded in South Africa as the initial move in the establishment of a trans-Africa service.

The Cairo-Khartoum project, it is believed in Africa, will be the next route to be launched, after which it is hoped the service will be extended to form a continuous link from Cairo to the Cape. The benefits would be incalculable, and colonists are looking forward with keen anticipation to the inauguration of the service, as well as to an early linking up of the Khartoum-Kenya route with Cairo. Upon the ionsummation of the project, mail time between western Europe and Central Africa, which now takes a month, would be reduced to approximately seven days.

Although the financial details of the arrangement of the approved route have not yet been made public, it is expected in South Africa that both Kenya and the Sudan will underwrite a large share of the initial expenditures, and will subscribe funds to support the line, at least in its experimental stage.

The Air Mail Fathers Commercial Aviation

Speech Delivered By the Hon. W. Irving Glover, Second Assistant Postmaster General, at the Convention of the National Association of Postmasters in Kansas City, Mo. on Sept. 23.

THE GREATEST need of the Air Mail today is not a better or speedier plane; it is not the question of a single or three motored ship nor the capacity for a greater pay load, but it is simply this—that a great universal advertising campaign should be inaugurated to sell the Air Mail—not for the Government-operated lines but for the contract lines, of which there are now fourteen in operation with more to follow in the near future.

Putting the Mail Across

The business of using the Air Mail has not been sold to the Public. Contractors have called on commercial bodies with great civic pride, spurring them on, who have given guarantees to them in pounds and dollars. Large users of the mails have also given their assurance of their willingness to use this new form of mail transportation, but, in many instances, these guarantees and pledges have fallen far short of the fulfillment of their promises, but the contractors have carried on, and are carrying on and will succeed—"more power to them".

What is needed is an advertising campaign, greater than any or all the contractors could afford to put on, to bring the subject of transportation in the air, for passengers, express and mail, to the people of the entire country.

This business of air transportation, commercially speaking, is new, brand new; it has to be sold to the people the same as a new toilet soap, a breakfast food, or chewing gum. Where is the great commercial company who organizes a five million dollar concern and puts it all in a plant to turn out the new world beating article, as before mentioned? The board of directors meets early in the incorporation of the company; the best advertising man and staff is employed (high pressure, if you will), and it is announced that the United Manufacturing Company sets aside one million dollars for advertising "the new non-roll off the knife pea". And from that time on, if no mistake has been made in the selection of the advertising staff, the sales begin to come in and the small, originally-built factory soon needs the addition, and ere long the new and larger factory is built, because of the sales from the results of the intensive advertising campaign that has been put on.

Commercial Aviation is the new business. It must be advertised and it must be sold, not to the users of the Air Mail of today, but sold to the people who do not know what the Air Mail is or what it means. Try this, you who are interested in the Air Mail, as I know you all are. Ask the first twenty people you meet in the street of your home city—Do you know what the Air Mail is; what it does for your city; what it will do for your business—Do you know how to use it; and just see what the answer is. I know because I have tried it several times and the ignorance of the general public as to the benefits of the service is amazing.

There are in this country great sums of money set aside for the development of aviation and its allied subjects. What greater good could be done with a portion of these funds than to start such a campaign for the sale of Commercial Aviation to the American people.

Benefactors to Aviation

Gentlemen, we have the ships; we have the pilots; we have the mechanics. The development of our flying courses, under the able administration of the Commerce Department will far outstrip the growth of the business. When can we start with the greatest need that Commercial Aviation has today—Advertising? No great American, who is interested in the development of aviation, could do more for his country and the development of this new method of transportation, than to make his dollars advertise Commercial Aviation.

The time is fast approaching when the Postmaster General will advertise for bids to take over by private contractors all the Government-operated air routes, that is, the trans-continental service—New York City to San Francisco—and the overnight service—New York to Chicago. The Post Office Department owns no carriers of the mails, such as railroads or steamboats, and why should it own and operate any line of this newest form of transportation of the mails—the air service.

The Backbone of Commercial Aviation

The Postmaster General believes, when the Trans-Continental Line, especially, is awarded to contractors for private operation, that he must be assured of one thing and that is the successful contractor must be financially able to conduct this service and, too, he must have had the experience as even that is as important as the financial requirements. One can imagine the disaster to Air Mail and, for that matter, Commercial Aviation, were this great Trans-Continental line awarded to a contractor and then, after a short period of operation, he should fail for, if there is nothing else that can be said of the Trans-Continental Government-operated route, this much can be said, i.e., it certainly is the backbone and the main artery that sustains our contract service today. It feeds to the contract routes and in return they feed to it, and it is highly important that it must be maintained, if not by private contract then by Government operation.

I am sure that I voice the feeling of Postmaster General New when I say that he believes that contractors, with the necessary requirements and guarantees of successful operation, are developing and, when ready for advertising, there will be at least several contractors ready to submit bids.

Quite recently the President of a great Railroad Company, in addressing the Chamber of Commerce in a certain city, said that railroads and autos would have to cooperate. He should have added the service of the airplane for, although passenger business represents only ¼th of the business of the railroads, a great percentage of those passengers are devoted to the thought of speed; it is uppermost in their minds as they think of their destination, and so it will be as Commercial Aviation develops its passenger business; patrons of the railroads will not be content to ride all the way across the continent by train de luxe but will demand and require an airplane service to take them off at, say, the Twin Cities, Chicago, St. Louis, Atlanta, and carry them by fast speeding, three-motored ship, to New York, saving a precious 24 hr. or, in some cases, a greater time than that.

Post Office Air Mail Record

The Post Office Department points with pride to its record, which it will shortly hang up. When one learns that "the Government-operated service, in the fiscal year 1926, flew 2,547,992 miles and almost a million miles of that was flown in darkness, with only two fatalities, or an average of 1,273,996 miles per fatal crash"—That is a record that any service could be proud of. And the record of miles flown per crash is even just as remarkable, it being 283,111 miles. In that same period of time we carried 14,145,640 letters or 353,841 pounds at the average number of 40 letters to the pound. The percentage of trips scheduled and performed is extremely interesting and it shows that there was scheduled 2,014,399 miles, and 1,888,047 miles completed with mail, or a percentage performance of 93.73 per cent. This was the record on the Transcontinental Service and the record of the New York-Chicago Night Service is just about as remarkable, showing 390,660 miles scheduled and 368,090 completed, or a percentage of 94.22 per cent. Perhaps not as good as the best railroads but still somewhere near that of many railroads.

And, in the performance of this great service, the Department operates a lighted Airway from New York City to Salt Lake City, Utah, a distance of 2,045 miles and the Transcontinental route is 2,669 miles long—New York to San Francisco. The cost of the installation of the lighted Airway was $542,000. Our route maintains 18 regular, fully-equipped, landing fields and 92 intermediate landing fields.

The operation of this great arm of the Post Office Department last year cost $2,782,422, and the appropriation was $2,885,000. Of the amount spent, $1,180,595 was for salaries and wages; pilots' pay, $197,496; buildings and improvements, $294,298; gasoline and oils, $232,738; other supplies and service, $877,295, and our inventory shows property valued at $3,816,679.

The Post Office Department is proud of the record of its Air Mail Service. It believes that it has done more for the advancement of Commercial Aviation, through the building and maintenance of the airway from New York to San Francisco, than any other known agency. It has blazed the way, so to speak, to show what could be done if a schedule was laid down and lived up to. It has shown that night-flying could be made safe and sure, except for its contention with its one deadly enemy—F O G—and this will soon be conquered. It has brought into the picture the further development of the service by the various Contract routes which it has established, fourteen of them, and, since they have been in operation, more than two million miles have been flown over the various routes which total 5,563 miles in length.

And the service is performed by ships which are able to fly 135 miles an hour, but an average speed is used of 110 miles, and we employ 76 planes and, of these, 61 are equipped for night flying. One just takes a short glimpse backward to September 26, 1905, when Wilbur Wright, with the biplane 'White Flier' at Dayton, Ohio, flew 11 miles, and, later, on September 12, 1908, when Orville Wright, also with a biplane at Ft. Myer, flew 50 miles in one hour and 14 minutes and 20 seconds. Certainly, the art of Aviation has advanced as regards speed and the time spent in the Air.

And, for this increased speed, the delivery of mail to its farthest destination has not increased in cost for, in the pony express days, it cost $5 a half ounce, afterwards being reduced to $2 a half ounce, while today the letter of one ounce costs 24 cents to be carried by the Air Mail Service from New York City to San Francisco.

Schneider Cup Race Postponed

The Schneider Cup Race which was to have been held at Hampton Roads, Va., on Oct. 24, has been postponed until Nov. 11.

This postponement has been made in line with a request from Italy, the only other country scheduled to participate in the event, asking that more time be given in which to get their planes prepared for the competition. The mooring our test required of all planes competing in the race will be held on Nov. 9 and the race two days later.

Preparations For Berlin-Tokio Air Service

From reports to the Department of Commerce, it is understood that two three-engine Junkers monoplanes are now exploring Siberia, particularly the region of Irkutsk and Lake Bailkal, in preparation for the probable opening next year of the air line from Berlin to Vladivostok or from Moscow to Tokyo.

Survey of route from Moscow to Vladivostok-Pekin-Tokio is being carried on with a view to opening it to passenger traffic next year. Two big biplanes did the entire flight from Moscow to Pekin in 10 jumps, with stopovers at Omsk, Tomsk, and Irkutsk. It is expected to make the trip in five days (possibly in less, with night traveling), when the line is opened to the public.

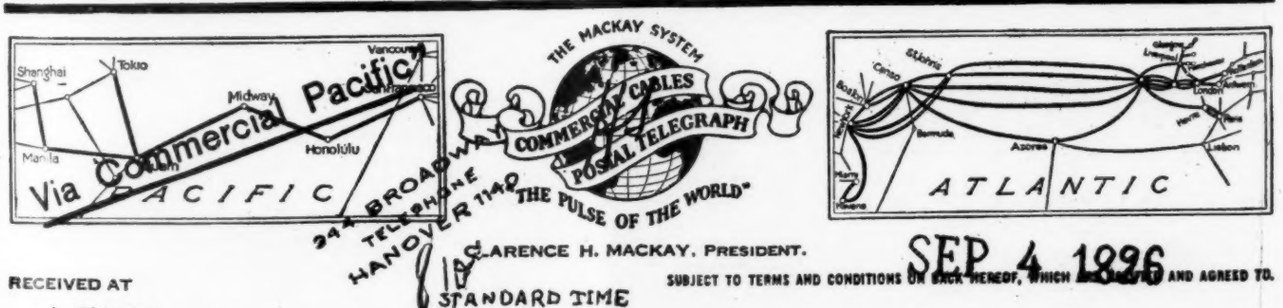
From Pekin, the route of the proposed airline continues to Dairen, the southermost point of Manchuria, and thence across the Bay of Korea to Osaka, Japan, and on to Tokyo. An announcement regarding the part of this route from Dairen to Tokyo, which is to be operated by the Japan Air Transportation Co., was made in the Oct. 4 issue of AVIATION.

The Altitude Record

In an editorial on Oct. 4 on making records it was stated that the altitude of 12,442 meters attained by Jean Calliza was equivalent to 47,370 ft. This of course was a typographical error, the correct figure should have been approximately 40,819 ft.

Form 62

CABLEGRAM - "VIA COMMERCIAL"



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The above cablegram from Pekin was sent by Dr. Knauss in charge of the Deutsche Luft Hansa and Duruluft Moscow-Pekin flight who had just arrived from Moscow by air. He sends "Heartiest Flier's greetings from Pekin". Two three-engined Junkers planes were used. Next year, the Berlin-Pekin airline will be opened for passengers.

Notes on the Parachute

Some Practical Details on the Use of Parachutes, by an Expert.

By SGT. J. PEARSON

Parachute Instructor, Mitchel Field, L. I., N. Y.

TO THE Army aviator, the idea of the parachute has become part of the regular routine of flying, although this has not always been so, for, when the parachute was first introduced into the Army, the fliers objected strenuously to wearing the clumsy contrivance necessary. Familiarity in wearing the pack and with the use of parachutes, together with the continually growing list of those whose lives had been saved by the parachute, have together gradually won over the Army personnel until now most of the men would feel distinctly uncomfortable if they were not sitting on a parachute when flying.

With civilian fliers the matter is quite different. They have not yet begun to consider parachutes in the same light as people do the life preservers which are stored on the decks of an ocean liner. Furthermore, the patent situation and manufacture for the Army and Navy have prevented any intensive campaign in the sale of parachutes to civilians and, accordingly, the high price of 'chutes has been a deterrent.

For civilian use in short passenger carrying hops, the parachute is practical, and for photographic work or mail and express air service, the parachute is coming more and more into favor, while for test work it is considered absolutely essential.

However, even for cross-country flying, passengers are beginning to regard parachutes as an added safety precaution, and the provision of parachutes is beginning to attract and give an added feeling of safety to those who have some knowledge of flying, rather than serving only to scare passengers away.

Use of the Parachute

The Army and Navy fliers all do a considerable amount of emergency jumping and have gathered much experience and knowledge of parachutes as a result. However, every real emergency jump is under entirely different circumstances and practice would do little good. The only thing to remember when an emergency jump becomes necessary is to jump as far clear from the airplane as possible and not to pull the rip-cord before jumping. The idea that the jumper must count ten before pulling the rip-cord is newspaper talk. In the three-fifths of a second which is the average time which it takes for a jumper to pull his ring, the man's body will fall well clear of the plane, and there is absolutely no danger of fouling. In the case of a spinning plane it has been found advisable by test to jump toward the outside of the spin. When spinning or in a dive the plane will almost invariably fall faster than the man will fall, even before the chute is opened.

Manipulating the Chute While Dropping

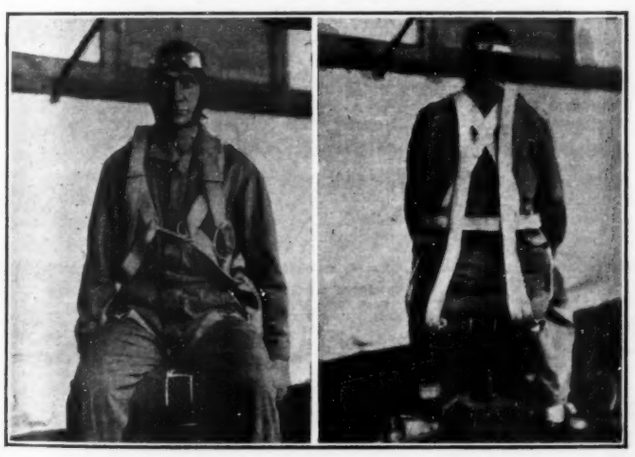
When the parachute has opened the jumper finds himself sitting in what amounts to a swing with webbing representing the ropes of the swing on either side of his body. Slightly above his head and within reach, the webbing divides into two and the shrouds or small cords which lead to the outer edge of the parachute are here attached to the harness in four places. To stop the swaying of the parachute the ropes can be pulled on one side or another. The parachute can be side-slipped about ten feet for every hundred feet of drop by pulling down on one side. The parachute will belly-in on this side, but will open out as soon as the shrouds are released. The parachute can even be made to spin by pulling down on one side and then releasing the pressure with a sort of flipping motion. This trick is hard to learn and can really only be done by one who had jumped before. In case it is found necessary to swing aside from some building or other obstacle, the shroud lines should be pulled in the direction in which the jumper wishes to travel. The side-slip of ten feet in a fall of one hundred feet is not enough to make headway against any sort of a wind, and this should be remembered in trying to avoid obstacles.

In landing, the feet should be close together and the knees somewhat bent. No effort should be made to stand up and

The Army type training chute and emergency pack. The emergency chute is carried for moral effect only as cases where the chest pack had to be used are exceptionally rare. The chest chute is slightly smaller than the seat and lap chutes being 22 ft. in diameter. The seat and lap types are 24 ft. in diameter. It will be observed that a single harness is used in this type although two chutes are worn, the extra set of risers being fastened to the harness just above where the chest pack is fastened to the wearer. In order to divide the strain equally, one half of the additional risers go to the back pack and the other half to the chest pack. The rip-cord for the chest pack will be observed as being placed on the right hand side of the pack and easily accessible. The practice parachute is slightly larger than the standard service type being 28 ft in diameter. It lets the wearer down at 15 ft. per sec.

The Army type lap pack. This type of pack is especially designed for use by aerial gunners and photographers. While the parachute and harness are identically the same, it is not practical to use the seat type for work that requires the wearer to stand up in the cockpit of a plane. The snaps on the pack fasten into the rings of the leg straps and when the wearer is sitting down the pack can be unfastened and placed on the seat along side the wearer.

the body should be relaxed. Rolling over absorbs the shock of the fall to some extent, and one is less apt to be hurt in taking the tumble than in trying too hard to resist one. Some try to roll over backward while others prefer to fall forward in the direction in which they are drifting, but as in most cases the inexperienced jumper has no choice in the matter. Either position, facing or back to the direction of drift will do sufficiently well. Should the jumper see that he is going to land in water, the two hooks across the legs and the hook



The Army service seat type parachute pack. Notice the snug fit of the harness, especially the leg straps. This is very important due to the fact that the leg straps are what hold the wearer in position in the swing when the parachute is in use. The risers, as the harness webbing attached to the chute is called, will be seen as lying close to shoulders and center of the back. They are stitched in this position for the comfort of the wearer with a light breaking cord which, while holding the risers in place, cannot be felt when the parachute is actually used.

across the chest can be unfastened so that the aviator can easily get loose from the harness when he alights.

Maintenance of Parachute

The Army Air Corps advocates the packing of a parachute once a month. For commercial purposes this is hardly necessary, and three to four times a year is sufficient. The inspection and repacking takes about one hour with two experienced men and the proper equipment for doing the job. As the correct packing of a parachute is absolutely essential to its proper functioning, the work should only be done by those who know their business thoroughly. The Army Air Corps and the United States Air Mail Service have been glad to cooperate with civilians in the repacking of parachutes. When not in use, the parachutes should be kept in a dry place. When the pack is not going to be used for a couple of weeks it is a good idea to loosen the elastic cords which tend to pull the pack open. When a pack has not been worn for several months it should certainly be repacked, because creases are apt to form in the silk possibly damaging the material. In the event of the pack becoming wet, it should be taken out and dried or else mildew is likely to form. If, however, the parachute is properly cared for and repacked from time to time it will last for several years.

Incidentally and in closing, it may be mentioned that the Field Service Section, Fairfield, Ohio, supplies a parachute manual giving further details on the care and operation of parachutes.

Dr. Karman Visits U.S.A.

Dr. Theodor von Karman, dean of the aerodynamics institute of the University of Aachen (Aix la Chapelle) Germany, and a scientist of world wide reputation, is visiting the United States this Fall.

Professor Karman arrived in the United States on Sept. 24, on the S.S. Mauretania. He has come to this country at the invitation of the Daniel Guggenheim Fund for the Promotion of Aeronautics, in order that education and research institutions here may have the benefit of his experience and advice.

Dr. von Karman's name is linked with the solutions of many basic problems of applied mechanics, and he has contributed much to the connecting of scientific investigation with practical engineering.

He started his research work by investigating the important problem of instability of columns under crippling loads, and after years of successful machine design and construction, has devoted much effort to the problems of aviation in Vienna and Budapest. In 1918 he computed and directed the design of a captive helicopter which was the first helicopter to successfully ascend several hundred feet. His activity as chief of the aerodynamic institute of Aachen has resulted in many valuable contributions to the progress of numerous branches of science.

He has given intensive study to the problems relating to the flow of fluids, the theory of friction, and the aerodynamic forces on airplane wings, propellers, and airships, as well as to the stability problems of aircraft.

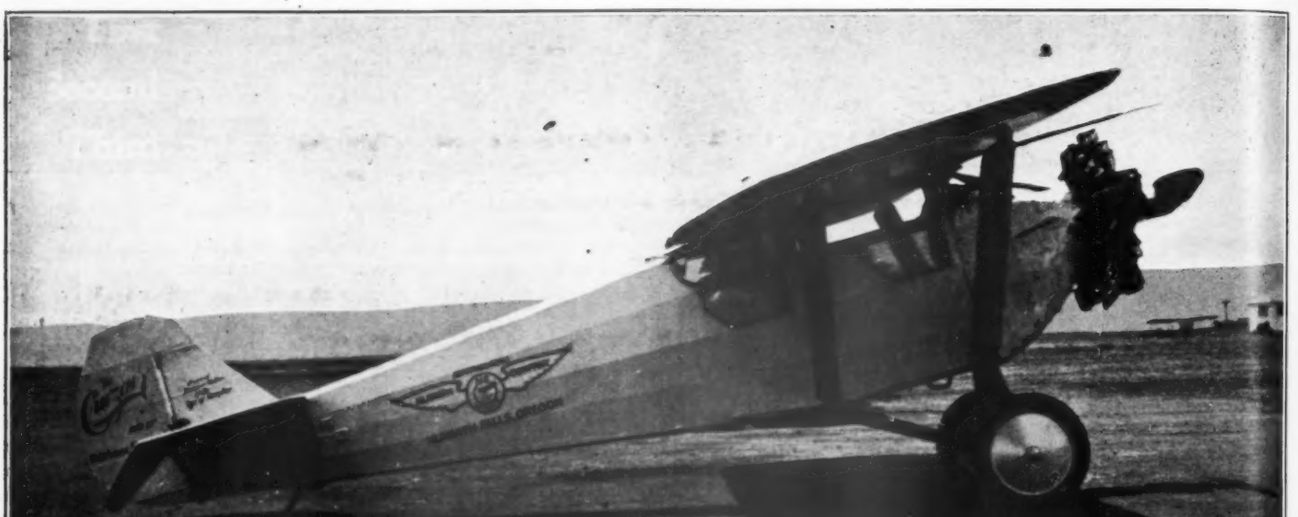
The Waterhouse "Cruzair" Monoplane

Another West Coast Commercial Design With a Wright Whirlwind Engine

THE WATERHOUSE Aircraft, Inc., of Glendale Airport, Glendale, Cal., which was recently incorporated to engage in the manufacture of airplanes, has designed the Cruzair, a monoplane, which was successfully flight-tested on July 12 at the Naval Air Station, San Diego, by Lieut. Franklin Young.

The fuselage of the Cruzair is constructed throughout of molybdenum steel tubing, with tension and compression members of the same material, and is of welded construction, diagonal wiring being entirely eliminated. The wing of the Cruzair is moderately thick being the Clark Y section. It is built up in one unit over the entire span. Two spars of the box type form the main members, with two-ply mahogany siding and the ribs which are of truss type built up of plywood and spruce. The leading edge of the wing is formed with mahogany plywood and the wing tips are constructed of molybdenum steel tubing, as is also the trailing edge of the wing. Two gasoline tanks are built into the wing at the center section and have a combined capacity of 58 gal. The fuselage and wings are covered with Irish linen, aluminum pigmented.

An interesting feature of this plane is the simple manner in which the wing is attached to the fuselage. The top longerons are brought up at the cockpit sections, which allows the wing to be placed flush with them, and eliminates the need of center section struts and makes the center section a part of the fuselage. This practice is similar to that employed in the design of the Ryan M-1 monoplane. It brings the top longerons above the heads of both the pilot and passengers. In order to provide the proper visibility for both pilot and passengers, the sides of the fuselage drop away at the rear of the pilot's cockpit and continue forward to the engine cowling, being supported on false longerons. This allows about fourteen inches between the under side of the wing and the cowling. Windows are also provided on each side of pilot and



The Waterhouse Cruzair (Wright Whirlwind). The side windows to the open cockpits give the appearance of a cabin plane.

Another view of the Waterhouse Cruzair (Wright Whirlwind). The machine is equipped with a Curtiss-Reed metal propeller.

passenger cockpits, which permits greater visibility and at the same time gives the plane the appearance of a cabin machine. The four steel tubing wing struts are streamlined, forming an airfoil section which arrangement is said to create a lift, tending to increase the inherent stability of the plane.

The engine mounting for the Wright Whirlwind air-cooled radial is of molybdenum steel tubing, bent in a circle, with the ends welded. The entire engine section is easily and quickly detachable by the removal of four bolts.

The Undercarriage

The landing chassis is of the split axle type, which eliminates the conventional axle between the wheels and a consequent danger of fouling and nosing over in tall grass, weeds and shrubs. Shock absorption is provided for with elastic cord wrapped so as to allow for easy replacement. The wheels are 30 in. by 5 in. which is said to be 250 per cent oversize for a plane of this weight and landing speed. The tail group, constructed entirely of steel, is of ample area and has proved to give ample control at low speeds.

The passenger cockpit seats two and is also fitted with a large luggage compartment in the false dash. It is interesting to note that the plane which made the successful flight tests last July was delivered to the Kalmath Air Service, Klamath Falls, Ore., and five more monoplanes have been ordered by this company. These machines are equipped with Curtiss-Reed metal propellers.

The specifications of the Cruzair together with the manufacturers figures of performance are as follows:

Specifications

Wing Span	36 ft.
Total length	23 ft. 10 in.
Wing area, with ailerons	240 ft.
Weight, empty	1540 lb.
Weight, fully loaded	2450 lb.
Wing loading	10.2 lb. per sq. ft.
Power loading	12.25 lb. per hp.
Capacity	2 passengers and pilot
Cargo space	50 cu. ft.
Speed range	45 to 138 m.p.h.
Cruising speed	117 m.p.h.
Rate of climb, full load, 1st minute	1200 ft.
Cruising range, loaded	5 hr.

The Conferences on Air Regulation

Beginning on Oct. 4, the Department of Commerce has been holding a series of meetings for the discussion and revision of the "Regulations for the licensing of Pilots and Aircraft of the U.S.A., as proposed by the Department of Commerce in collaboration with the Army Air Corps and the Naval Air Service". Special hearings were held for the various groups and everyone interested was invited to attend and present their viewpoint. The manufacturers of aircraft, the manufacturers of engines, aircraft operators, insurance men, etc., were each alloted a day, or two days if necessary. The conferences lasted from ten in the morning until late in tthe afternoon and every phase of the regulations was gone into from the various viewpoints.

Wm. P. MacCracken, Assistant Secretary of Commerce for Aeronautics, presided at the meetings with much skill, for he not only kept the various witnesses fairly close to the subject in hand, but he tried impartially to obtain the opinions of all those present. Prof. Alexander Klemin of New York University was the technical advisor, and Mr. Grimshaw, a lawyer, the secretary of the meetings. Two representatives of McCook Field, and an occasional representative of the Bureau of Standards and of the Navy also assisted in the proceedings.

Previous to the conferences, the Aeronautical Chamber of Commerce headed by Paul Henderson had held a conference on the regulations which was attended by the following:

E. A. Johnson, Johnson Airplane & Supply Co., Dayton, O.
J. G. Ray, Pitcairn Aviation, Philadelphia, Pa.
G. S. Ireland, Ireland Aircraft Inc., Garden City, L. I.
C. S. Jones, Curtiss Flying Service, Garden City, L. I.
R. H. Depew, Jr., and F. R. Weymouth, Fairchild Aviation Corp., New York, N. Y.
C. L. Lawrance, Wright Aeronautical Corp., Paterson, N. J.
S. S. Bradley, General Manager, A. C. of C.

This group had gone over the regulations most carefully and came to the first meeting at Washington with a well-worked-out set of suggested modifications. The proposed regulations had been based on the Aeronautical Safety Code and various foreign civilian regulations. It is as yet too early even to outline the modifications to the "proposed" regulations but the Assistant Secretary seemed to lend a sympathetic ear to suggestions for the simplification of the rules.

D. B. Colyer, who has recently been appointed General Superintendent of the Air Mail Service.

In all, seven conferences are to be held before the new draft of the regulations will be drawn up. The first conference, held on Oct. 4, was for the manufacturers of aircraft. The following were present:

Assistant Secretary MacCracken and Ira Grimshaw, representing the Department of Commerce; Lieut. E. P. Page, Army Air Corps; J. B. Johnson, Dayton, O., Department of War; I. M. Ladden, Dayton, O., Engineering Division, Army Air Corps; W. G. Lockwood, Dayton, O., Engineering Division, Army Air Corps; Richard H. Depew, Jr., Fairchild Aviation Corporation; R. Sanford Saltus, Ludington Eyhibition Company; Halbert E. Payne, Atlantic Aircraft Corporation; Charles S. Jones, Curtiss Aeroplane and Motor Company; S. S. Bradley, Aeronautics Chamber of Commerce; R. N. Noordey, Atlantic Aircraft Corporation; Fokker Aircraft Corporation, G. S. Ireland, Ireland Aircraft, Inc.; Lester D. Gardner, Aviation Magazine; Prof. Alexander Klemin, Daniel Guggenheim School of Aeronautics, New York University; William B. Stout, Ford Motor Company.

The second conference, held on Oct. 6, for the engine manufacturers, was attended by:

T. N. Joyce, Curtiss Aeroplane and Motor Company, Garden City, N. Y.; T. M. Simpson, Continental Motors Corporation, Detroit; E. T. Jones and Charles Lawrance, Wright Aircraft Corporation, Paterson, N. J.; S. S. Bradley, Aeronautical Chamber of Commerce; W. G. Lockwood, Engineering Division, Army Air Corps; J. M. Keddon, Engineering Division, Army Air Corps; J. P. Johnson, McCookField, Dayton, Ohio; McD. Kintz, office of the Chief of Staff, Army Air Corps; E. P. Page, McCook Field, Dayton, Ohio; Ira M. Grimshaw, Clarence M. Young, D. H. Stuart and R. S. Moore, Department of Commerce.

The conference of Oct. 8 was a second meeting of the manufacturers and was attended by:

J. A. McInaney, Alexander Aircraft Co., Denver; S. S. Bradley, Aeronautical Chamber of Commerce; A. J. Elias, G. Elias & Bro., Inc. Buffalo, N. Y.; C. J. Buckner, Advance Aircraft Co., Troy, Ohio; E. D. Osborn, Edo Aircraft Co., New York; Halbert E. Payne, Atlantic Aircraft Corp., Hasbrouck Heights, N. J.; F. H. Russell, Curtiss Aeroplane and Motor Corp., Garden City, N. Y.; T. N. Joyce, Curtiss representative at Baltimore; Alexander Klemin, Daniel Guggenheim School of Aeronautics, New York University; J. B. Johnson, McCook Field, Dayton, Ohio; L. M. Ladden and W. G. Lockwood, Engineering Division, Army Air Corps; C. M. Young and R. S. Moore, Aeronautics Branch of the Department of Commerce.

The conference of Oct. 11 was for contractors; that of Oct. 13, for the pilots and aerial service operators, that of Oct. 18, for insurance interests, while the seventh conference will bring together the aeronautical publishers.

England-Australia and Back By Air

The story of another great flight was brought to a close on Oct. 1 with the arrival in London of Alan J. Cobham, the well-known British long distance pilot after his flight from England to Australia and return. The flight is one of the most significant events in international aeronautics of recent times for it is a striking example of what can be done with a modern airplane, a modern engine and a good pilot but with little or no outside assistance whatever. The flight was carried out in a de Havilland 50 J, the same machine that Cobham used in his recent flight from London to Cape Town and back. The engine was an Armstrong Siddeley Jaguar air-cooled radial of 385 hp. Twin metal pontoons were constructed for the plane for use as far as Port Darwin, Australia, after which arrangements were made to have the plane mounted on a wheel undercarriage for the continuation of the journey.

The flight started from England on June 30 with the departure of Alan Cobham and his mechanic and close friend A. B. Elliott from Rochester. Naples was reached the same evening and on July 1, Athens was reached where a day was spent. On July 3 Cobham and Elliott pushed on to Alexandretta and to Baghdad on July 4. It was while flying from Baghdad to Bandar Abbas that Mr. Elliott was shot at by an Arab from the ground and fatally wounded. This loss was a great shock to Cobham, for, apart from Elliott's great value—Mr. Cobham could never speak highly enough of him—he was a very close companion to the flier. It is understood that the Arab alleged to have fired the fatal shot has recently been caught and is being brought to judgment.

At this time Sergeant Ward of the Royal Force was sent out to join Cobham, that the flight to Australia might be continued with as little delay as possible and the two fliers left Basra early on July 13 and arrived at Bushive in 2 hr. 50 min., leaving again the next day for Bandar Abbas. An attempt to take off for Charbar the same day resulted in a minor accident which damaged an undercarriage strut and it was not until July 18 that it was possible to leave Bandar Abbas when Karachi was reached via Charbar the same day. A whole day was spent in Karachi and on July 20, the flight was continued to Bahawalpur, and on to Delhi, July 21, and to Akyab on the 24th, and to Rangoon on the following day. During the flight from Karachi to Rangoon, very heavy monsoon weather was encountered and the comparative speed with which this part of the flight was made appears to represent a very creditable performance both for the fliers and for the airplane and engine.

On July 27, the flight towards Australia was continued and Victoria Point, the southermost point of Burma, was reached, Allahabad and Calcutta on July 22. The flight was continued continuing to Penang the following day and to Singapore, where a whole day was spent, on July 29. The flight continued to Australia as follows: July 31, Muntok (Sumatra); Aug. 1, Batavia; Aug. 2, Sourabaya; Aug. 3, Bima; Aug. 4, Kupang (Timor); and Aug. 5 Port Darwin, Australia. Thus, while the flight was not ended, it had taken 37 days to reach Australia from England. It will be recalled that a similar flight was made by Sir Ross Smith in 1920 in a twin-engine Vickers Vimy plane in 29 days, so that Mr. Cobham had not broken a record by his flight. He had, however, not attempted to make exceptional speed.

At Port Darwin, the float undercarriage was replaced by a wheel chassis and on Aug. 8, the fliers continued to Brunette and on to Camoweal. On Aug. 10, they reached Charleville and on Aug. 11, Sydney, where they were met by a squadron of planes of the Royal Australian Air Force and some DH Moth machines of the local aero club. Mr. Cobham and Sgt. Ward remained five days in Sydney, attempting fêtes and other functions in their honor. Leaving Sydney, they reached Melbourne on Aug. 15, where they were met by no less than 100,000 people. Thus, the fliers covered approximately 13,000 miles in 47 days.

At Melbourne, where the fliers stayed until Aug. 29, Alan Cobham did a considerable amount of flying, carrying passengers in a DH Moth while his DH 501 was being overhauled for the return flight. Incidentally, during his stay in Melbourne, he won the Australian Aerial Derby, which happened to be scheduled for that time.

On Aug. 29 he set out on the return flight to England, carrying, in addition to Sergeant Ward, C. S. Capel, an official of the Armstrong Siddeley company, manufacturers of the Jaguar engine, who had travelled to Australia in the ordinary manner so as to be there when Cobham arrived and give any attention necessary to the engine before the return

International Nev.

Alan Cobham (light gray suit) and his two companions Sgt. Ward and C. S. Capel, immediately after their landing on the Thames River at London opposite the Houses of Parliament, where they were met by thousands of Londoners. The Government buildings do not appear in the photograph.

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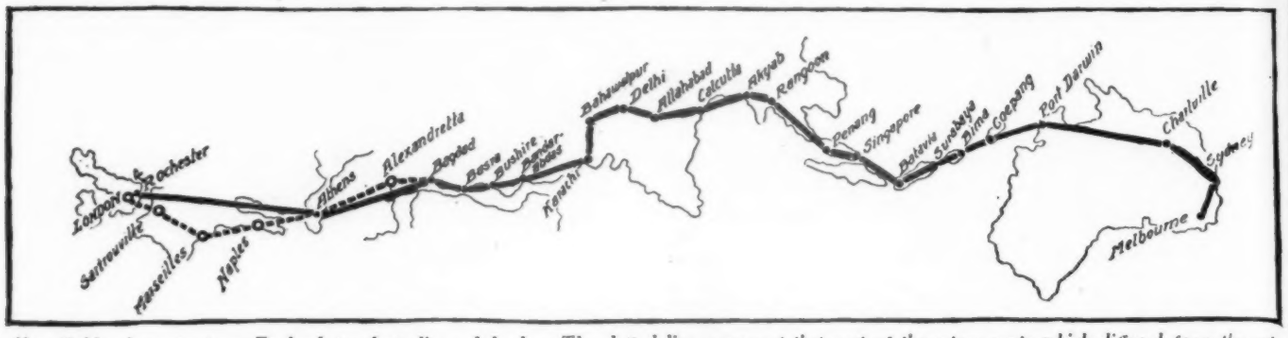


Alan Cobham's route from England to Australia and back. The dotted lines represent that part of the return route which differed from the outward course taken.

flight. The first leg of the return flight was to Adelaide. On the following day, Oodnadatta, S. Australia, was reached via Maru and on Aug. 31, the flight continued to Alice Springs, and Katerine, Northern Territory, via Newcastle Waters, was reached on Sept. 1. The last point on the Australian continent, Port Darwin, was reached on Sept. 2, where the pontoons were refitted. Thus, Australia was crossed in no more than 3½ days.

From then on, very good time was made until Penang was reached. It was the fliers intention to rush home and endeavor to make record time, which they had not tried to do on the outward journey. The times were as follows: Sept. 4, Kupang; Sept. 5, Sourabaya; Sept. 6, Muntok via Batavia; Sept. 7, Singapore and on to Penang. Cobham left Penang the following day but was forced down by weather at a small town called Puket on an island off the coast of Malay and 550 miles from Rangoon. Leaving there the next day, the fliers were again compelled to land owing to the extremely heavy monsoon weather at a place called Point Victoria where there are no communication facilities at all, with the result that nothing was heard of the fliers for several days and some anxiety was felt for their safety. Rangoon was eventually reached on Sept. 15. The fliers reported that at Point Victoria they had landed in a sheltered bay and did not venture to get out into the open owing to the severity of the weather. The weather continued bad and it was not possible to reach Akyab before Sept. 15. After this, having left the monsoon area, better headway was made and Allahabad, via Chittagong and Calcutta was reached after two days of flying, not, of course, continuous, on Sept. 21. Thereafter, progress was fairly rapid and uneventful and was made approximately to the following schedule: Sept. 22, Delhi and Bhawalpur; Sept. 23, Karachi; Sept. 26 Basra via Charbar and Jask (Pershian Gulf); Sept. 27, Baghdad and Alexandretta, etc., Paris being reached on Sept. 30 and the arrival in London, which will probably remain a striking memory to many hundreds of thousands of Londoners, on Oct. 1.

Thus, a great flight ended, Cobham landing on the Thames River outside the Houses of Parliament where he and his companions were received by Sir Samuel Hoare, British Secretary of State for Air and numerous other government and aeronautical personalities. The total distance of the flight was approximately 26,000 miles and the flying time about 320 hr. It is too early to draw any definite conclusions from the achievement for no details of the flight or the experiences of the fliers are yet available. It is most significant, however, to note that not once during the entire flight did either airplane or engine give a moment's trouble, the slight delay at Bandar Abbas due to a broken undercarriage strut being in no way the fault of the airplane itself. It is interesting that an air-cooled engine of the radial type was employed and that, in spite of the extremes of cold, heat and monsoon damp weather, this power plant functioned during the entire 320 hr. without trouble of any kind.

As a national recognition of his achievement, Alan Cobham has been knighted by King George V, while Sergeant Ward was awarded the Air Force Medal. Sir Alan Cobham is shortly to carry out a lecture tour in this country and his account of his experiences on this and his many other notable flights will be awaited with expectancy.

Aviation Life Insurance

C. Stuart-Linton, of 110 E. 42nd St., New York City, who recently insured the life of Anthony H. G. Fokker, for approximately $2,000,000., is a pioneer in the aviation insurance field. One of the first to see in the world expansion of the industry a need for special insurance of this kind, Mr. Linton has decided to devote much of his activity to life insurance protection for the families of fliers, civilian, naval and military, and government mail pilots.

The stand taken for many years by American and Canadian life insurance companies has been one of aloofness from aviation workers, but the improvement in airplane manufacturing and the growing confidence in and knowledge of aviation on the part of the general public, has brought a change of policy.

Mr. Linton has had wide experience in the general insurance field, having insured some of the most distinguished European visitors to America in recent years.

The Air Corps Airplane Radio Set

In view of the fact that, in the not far distant future, civil aircraft operating in interstate commerce will be equipped with radio apparatus to enable pilots to take advantage of the radio broadcasting of weather information along the airways, it will be of interest to many to learn a few details of the type of radio receiving set developed by the Air Corps for installation in service airplanes.

The set is made up of two separate units; one unit, containing seven tubes with accompanying transformers, etc., which is mounted in the fuselage; the other unit, known as the tuner, which is mounted in the rear cockpit within reach of the observer. This tuner contains one vacuum tube which is the oscillator. In addition to this oscillating tube, the tuner contains a condenser for tuning the grid of the tube, and a condenser in connection with a variometer for tuning the antennae to different wave lengths.

A third control on the tuner is a filament rheostat. The tubes used in this set are standard VT-5's using one-quarter of an ampere for the filaments and from 45 to 60 volts for the plate. The function of the tubes is as follows:

The oscillating tube in the tuner, first detector, three tubes for intermediate frequencies, second detector, two stages of audio.

The set with filament battery weighs approximately 20 lb.

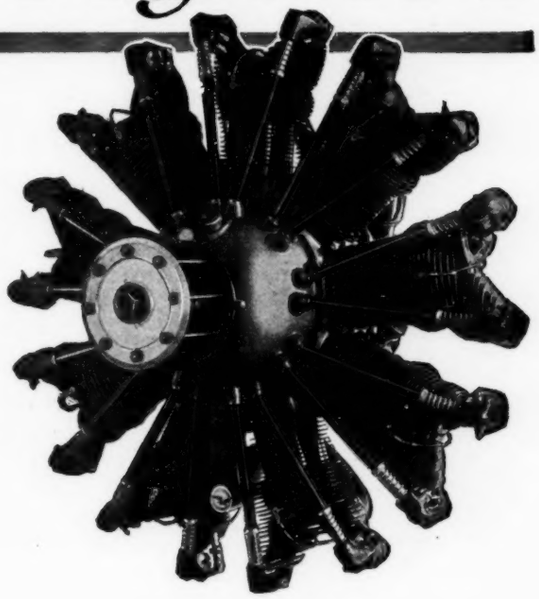
In tests at McCook Field conversation has been carried on between an airplane 75 or 80 miles distant from the ground station. On numerous occasions broadcasting stations such as those located at St. Louis, Chicago, and Cincinnati, have been received in the McCook Field vicinity with good volume.

Since the superheterodyne is extremely sensitive to electrical disturbance it is necessary to have the ignition shielded.

Air Cooled Fighters

"Wasp" leadership, established through improvement in basic design, has resulted in a new and broader application for radial air cooled engines.

These unusual qualities coupled with Pratt & Whitney's unexcelled workmanship make for the fine performance and dependability so vital in both military and commercial flying.



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Weight 650 lbs.

Wasp Engines are now flying in these Navy Fighters

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THE BOEING FIGHTER

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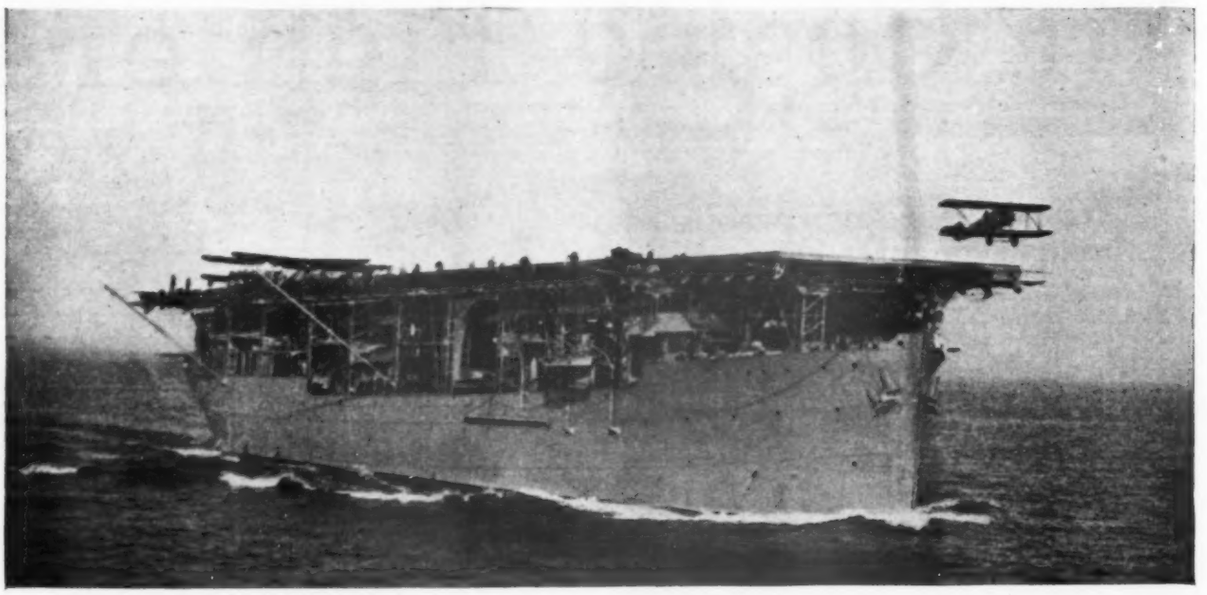
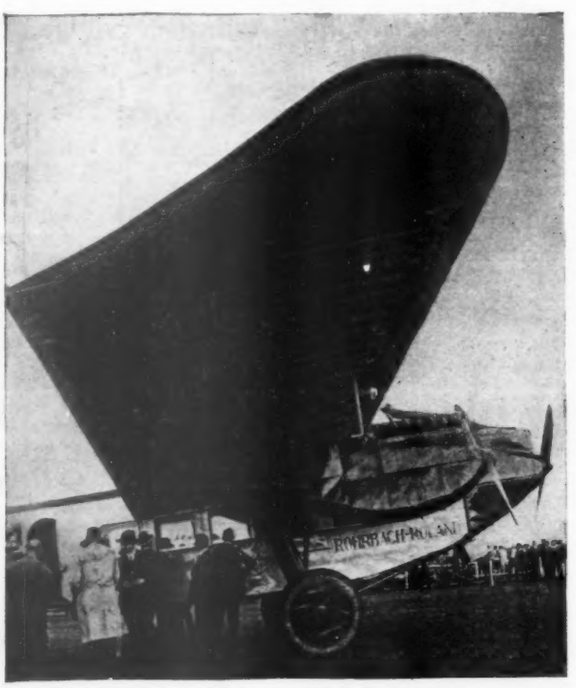
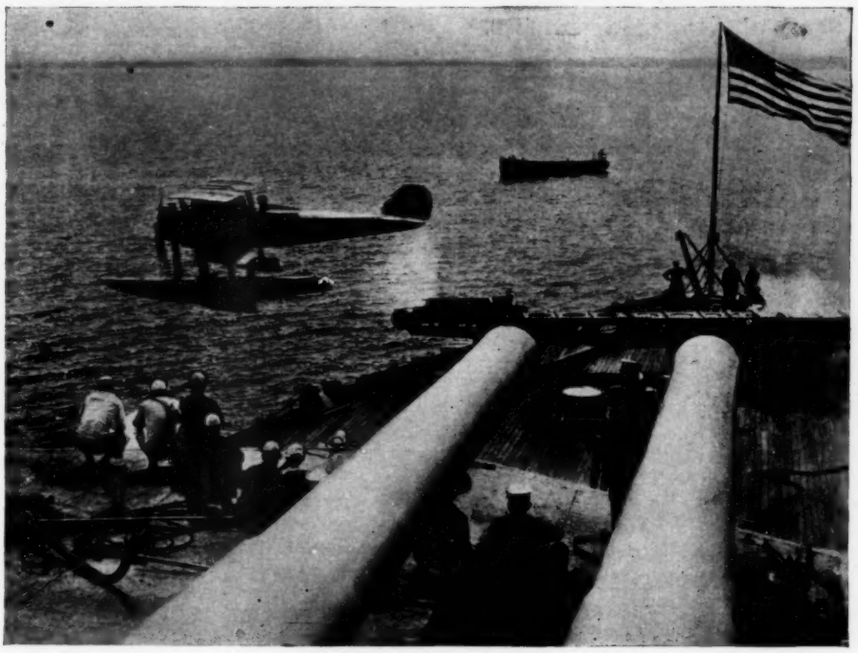


A FLOATING AIRDROME. The airplane carrier U.S.S. Langley cruising with the Pacific Fleet in maneuvers off the California coast and a Consolidated P-1 training plane (Wright Whirlwind) leaving the deck.

(Right) *ANOTHER THREE-ENGINED MONSTER. The all-metal Rohrbach Roland, one of Germany's latest three-engined airliners, being inspected at Tempelhofer Field, the airport of Berlin. The machine is said to have "gun-metal" wings.*



(Left) *ECONOMIC FLYING. Capt. H. S. Broad, who piloted one of the British Schneider Cup planes at Baltimore last year, flying the deHavilland Moth (Armstrong-Siddeley Genet, 60 hp.) over the Blackburn Blue Bird (Genet, 60 hp.) in the lightplane trails at Lympne, England, recently.*



WITH THE FLEET. A Vought VE-7 catapulting off the quarterdeck of the U.S.S. Maryland in naval operations at sea.

PIONEERING A NEW AIR MAIL ROUTE. The first southbound mailplane of the Pacific Air Transport, Inc., arriving at San Francisco, midst a cloud of dust, from Seattle en route for Los Angeles. The planes are Ryan M-1's with Whirlwind engines.

MAKING HISTORY. A Curtiss Oriole which recently landed on Max Patch, one of the lofty summits of the Smoky Mountains, Tennessee, was a source of great attraction among the mountaineers, many of whom had never even seen a locomotive, let alone an airplane. The surrounding terrain looks by no means inviting from the standpoint of airplane landings.

Side Slips

By Robert R. Osborn

The proposed air regulations of the Department of Commerce, as outlined in the Sept. 27 issue of AVIATION, seem, at first reading, to be quite well done. Of course it would be possible to point out loop-holes and errors of omission or commission in any proposed regulations of this type, unless they were worded in such a cumbersome manner as to be impractical so the following comments on the proposals are not to be taken too seriously.

• • •

Under the heading "Definitions" we find "8. Landing means coming in contact with a surface capable of supporting aircraft and includes the immediately preceding and succeeding acts." It might be well to qualify the word "contact" with some such words as "gently" or "purposely". We have witnessed contacts with a surface capable of supporting aircraft, which would be classed as landings under this definition, in which the "immediately succeeding act" was the purchase of a new airplane.

• • •

It seems that all airplanes registered under these regulations will be given a registry number—probably assigned in consecutive order as application is made. Noting the minimum size that may be used for these registry numbers, and the number of places in which they must appear, it seems that the number of lightplanes in the future is going to be quite limited, unless they are permitted to tow box-kite trailers on which the numbers may be continued.

These numbers might represent quite an item in weight, when the long-looked-for boom in commercial aviation finally arrives, and plane builders might be compelled to guarantee their load factors and performance at "full load less license numbers". If Mr. Ford, for instance, had been turning out lightplanes at the same rate as he has his light cars, by now he would have to design them for carrying the figures exclusively.

• • •

Under the "Air Traffic Rules" heading, the order in which planes must give right-of-way to other planes, reminded us of a similar rule regarding railroading, which, if memory serves, can be credited to a New Jersey or Pennsylvania commerce commission—"When two trains approach a cross-over at the same time, both trains must come to a full stop, and neither may proceed until the other has passed."

The classification of an airship out of control as a free balloon, under the right-of-way rulings, should certainly complicate matters for the men in charge of the annual balloon races. It would surely be a blow to them to have the distance record for free balloons broken by an inexperienced pilot in a "Jenny".

The "Equipment and Instruments" section of the proposed regulations seemed to have been patterned after the maritime rules covering the equipment required in motor boats, and we expected to find at the bottom of the list "anchor and line, two copies of pilot's rules, and a whistle." We predict an early corruption of these equipment requirements unless they are rigidly enforced. A tin can full of sand may become a fire extinguisher, a stick in the gas tank, a fuel gauge, water wings might be life preservers and the first aid kit will probably contain a small bottle of iodine and some sticking plaster.

Some of the light automobiles of today cannot get up long hills unless they go in reverse. It is entirely possible that some of the lightplanes of the future might have the same shortcoming, in which case it might be wise to add a rule to the effect that no airplane may climb in a reversed direction unless the running lights are also reversed.

Another requirement might well be added, too, limiting the parking of helicopters on busy air lanes to above 15,000 ft.

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AIRPORTS AND AIRWAYS

Rochester, N. Y.

By M. B. Scales

Six airplanes arrived at Britton Field, Rochester, N. Y., Monday noon, Sept. 27, bringing 11 Buffalo business men to Rochester as luncheon guests of the aviation committee of the Rochester Chamber of Commerce. It was the first of a series of Eastern States airway conferences to take place along the proposed new airway connecting New York, Buffalo and Boston. The Buffalo men were received at the field by a delegation of city officials and representatives of the Rochester Chamber of Commerce and were escorted to the Powers Hotel for luncheon.

One of the six airplanes was forced down near Batavia by engine trouble on the way to Rochester. Pilot Bradford said a gasoline line was clogged. The machine made a safe landing. The luncheon was the first in the city of Rochester for which guests arrived by airplane, and is expected to prove a milestone in the development of an airport here. H. Ralph Badger, vice president of the Buffalo air board and leader of the delegation, was principal speaker. He congratulated Rochester on its early purchase of land especially well fitted for aviation purposes. He told about the possibilities of a modern airport and about plans for the city of Buffalo's airport.

The squadron of airplanes left Rochester in the afternoon for Albany, Springfield and Boston, Mass., and Syracuse which was visited on the return trip. At each one of the cities conferences regarding the proposed route took place. The flight ended at Buffalo on Thursday, Sept. 30.

Joseph E. Swope of 32 North Union Street, Rochester, N. Y., an automobile dealer, has done his bit to put Rochester on the map in aviation circles. He has had a sign painted on the roof of his building displaying the word Rochester in letters 10 ft. high. A 50 ft. arrow in white points due North. The sign can be seen from a height of 12,000 ft. A photograph showing the sign was taken recently by F. D. Pierce, director of the Journal-American's radio studio, WHEC, with a long distance camera, the improvements in the lens of which are being perfected by the Eastman Kodak Company of Rochester.

New England News

By Daniel Rochford

New England aviation winds up the summer of 1926 with Boston and Hartford sharing the honors of flying leadership. Boston easily leads in total amount of service flying each week and frequently averaging over one hundred hours, in commercial flying. However Hartford has more commercial planes on hand than Boston. The summer has seen the hopes of the Connecticut valley, that Bethany would be a great air center, disappointed. Colonial Air Transport, Inc., growing out of a Bethany air enterprise of similar name, moved its center of activity, first to Boston, and now with Major General John F. O'Ryan's presidency, to New York. Single-motored planes have been flown, a round trip being made daily, north in the morning and south in the evening.

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Super-Rhone, Curtiss OX5, Hispano-Suiza and Wright Whirlwind.

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ALL AMERICANS WHO DESIRE TO MAKE AMERICA FIRST IN THE AIR.

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In New Haven aerial activity has chiefly been of seaplane nature and culminated in the recent seaplane operator's convention there. Up the coast north of Boston, Harry Jones has done a fair land and seaplane business at Old Orchard Beach. Bangor had rather roseate dreams of its air empire being realized this summer but has not lost hope for another year. A local flying school conducted a ground course but did not find itself able to bring about real air activity off the ground in Bangor. Several smaller operators have had planes at different points about the states and a great deal of unrecorded commercial flying has been done in New England.

In Boston there are three separate service groups flying regularly. The army, regulars and reserves; the National Guard; and the Naval Reserve Air Station at Squantum. The regulars and reserves have two hangars at the Boston Airport with at least a half dozen planes in flying status all the time. They are mostly JNs. There are several DHs which are used for artillery and cross country missions, the Jennies serving for the airdrome flying. Captain Horace N. Heisen commands the Airport. Captain C. W. Ford, assistant Corps Area Air Officer, and Flight Sergeant Richard Cobb are the regular pilots flying daily from the Airport. Over at Massachusetts Institute of Technology a half dozen more regular army pilots are studying and they report at the airport for flying time and are used on occasional army flight missions. Lieutenant A. E. Jones is regular army instructor to the Massachusetts National Guard squadron.

Besides the regulars about twenty reserve pilots are very active at Boston, flying almost regularly each week up to the four hour a month limit allowed reservists. A reserve squadron of active pilots was organized this summer. Captain Bartlett Beaman commands it. These officers fly in the ships of the regular army.

Major Charles M. Wooley commands the 26th Division Air Service. At least eight of his pilots get into the air every week. The Guard and the Army have two hangars each.

The Squantum naval station is commanded by Lieutenant Reginald D. Thomas, a reservist who has been on active duty the past several years. Thomas won the Schiff Trophy a year ago and flew 742 hours in 1925. His two year time is within two years of that of Captain Denny, Marine winner of the Schiff Trophy this year. Regular navy pilots in the First Naval District fly at Squantum. Its chief activity has been training primary flying students for naval reserve ensign's commissions. Every winter a course is conducted at Tech, the spring semester being in theory. Then summers they are given six week courses in actual flying. On graduation they attend the advanced course at Hampton Roads, Va., the next summer, and receive their ratings and commissions.

The commercial flying groups in Boston have been busied chiefly with instruction. Over thirty pupils have taken courses this year. Several private ownerships of planes have resulted.

The week has seen the foundations of the first real commercial hangar in Boston, completed by the William E. Arthur Company of New York for the Boston Airport Improvement Corporation. The second commercial hangar is expected before winter. It will be erected for the Colonial Air Transport, Inc.

Such is the general picture of New England aviation. The writer will endeavor to keep it up to date from week to week in these columns.

Private Touring by Air in England

A very excellent idea of the possibilities of private touring by airplane is given by news of a recent four-day flying holiday tour carried out by a member of the London Aeroplane Club, England. At an average cost for gasoline and oil, landing fees and night storage of about 5 cents per mile, 792 miles were covered comfortably in the four days. The airplane used was a deHavilland Moth with a 60 hp. Cirrus engine.

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The New Haven Seaplane Convention

Owing to one of those inevitable mistakes which are met in all spheres of work, the conclusion of the story and the results of the New Haven Seaplane Convention were omitted from our October 11 issue.

The convention was exceedingly successful and the results most interesting.

The complete list of winners follows:

Out-to-New Haven race—first prize of $100. offered by the New Haven Air Terminal, Inc., and a cup by the Hughson Post of the American Legion, won by George Rummill, of Lake George, New York; second prize of a barrel of oil offered by the Walter M. Goodrich Company and a cup by the Hughson Post, won by James Mulcahy of Port Washington, New York; third prize, $25. offered by the New Haven Air Terminal, Inc., and a cup by the Hughson Post of the American Legion, won by Robert Moore of Port Washington.

Seaplane Race—first, silver cup offered by Benjamin Abrams of the Model Clothing Company, won by Rummil; second, clock offered by the New Haven Clock Company, won by Mulcahy; third, watch offered by the Diamond Film Company, won by Harry Rogers of Garden City.

Speedboat Race—first, cup offered by Kirby Jewelry Store, won by Ralph Pride of New Haven; second, cup offered by Albert Widman, of the Lighthouse Ferry, won by Claus Johnson, of Short Beach; third, watch offered by the Diamond Film Company, won by Oliver Gildersleeve.

Load Contest—first, cup by Spector, New Haven jewelry, and cup by the New Haven Advertising Club won by Rogers; second, clock by the New Haven Clock Company, won by Rummill; third, cup by Post 47 of the American Legion won by Muleahy.

United States Service Seaplane Race—first, New Haven Register cup won by Lt. Max Welbourn; second, M. H. Kernodle, cup by the McAl Shop.

The planes of the 118th Observation Squadron were piloted by Lieut. L. W. Fleet and Sgt. Holstrom, Lieut. W. B. Wheatley, Lieut. O. S. Mather and Sgt. Scott Cole. Capt. Clarence Knox, state inspector for aircraft of the Motor Vehicle Department was the head judge.

Roanoke, Va.

Business interests in Virginia have awakened to the importance of adequate air transportation facilities as evinced at the Autumn meeting of the Virginia State Chamber of Commerce directors. At this meeting, resolutions were adopted calling upon the Virginia General Assembly to "pass such legislation as may be necessary to authorize the cities, towns and counties of Virginia to acquire by purchase or otherwise, suitable property to be developed, maintained and used as aerial landing fields and for the establishment of air ports."

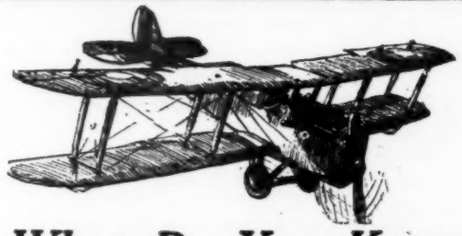
Richmond has realized the importance of a municipal airport and a committee of the Richmond Chamber of Commerce is preparing a report stressing the importance of the establishment of a landing field in the city. Norfolk already is one of the three points to be touched by air route which connects it with Philadelphia and Washington.

Madrid-Valencia Line

Concession for air line between Madrid and Valencia has been granted by the Spanish Government to the "Sociedad Anonima Union Aerea Espanola." It is expected that the line will be put in operation shortly. Four Junkers all-metal planes, 3 of 12-passenger capacity and one of 6-passenger capacity, will be used. The actual flying time between the two cities will be about 2 hours.

Aviation in India

Appointment of Director of Civil Aviation for India has been provided for by the Government of that country. The Government also intends to level a site for airdromes at Karachi for projected Cairo-Karachi airplane service.



What Do You Know About Airplanes?

A FEW years ago men had to learn about aircraft from personal, costly experience. They had no one to guide them—no one to point out mistakes when they were made—and therefore years were spent learning what takes months now.

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Pitcairn Fleld, Pa.

Pitcairn Field, having recovered from the excitement of the National Air Races, including the distribution of the "dividend" of bonus checks from the prize money, is now back on regular schedule, instructing students, carrying passengers, and flying hither and yon on special missions over these Eastern United States. Business at the field is still brisk, but the short-flight record is lower since daylight saving went out of fashion. This, however, is partly compensated by increased activity at the Sesqui-Centennial, where Pitcairn Aviation operates the flying concession.

Most of the flying at the exhibition field is done by A. P. Kerr, Pitcairn pilot and First Lieutenant in the Air Service Reserve. A total of 2,528 passengers has been carried to date at the Sesqui-Centennial. The usual flight is over the Delaware River, the Navy Yard, part of the city of Philadelphia, and the Exposition grounds. The exhibition is so extensive that the only way to be able to say truthfully that you have seen it all, is to ride over it in a plane, and an increasing number of people are doing so. The flying field is rather unfortunately located for its purpose, since it is tucked away down in the low countries to the south west of the grounds, but this could not be helped.

Out at the main flying field there are now 27 students enrolled for flying instructions. Jim Ray flew a Pitcairn Orowing over to Garden City on September 26th, and came back with a gold watch which he claimed to have won in some sort of contest up there. Casey Jones stopped in to see us on his way home one day, and he and Ray had their pictures taken, making a very handsome couple. Ben Faulkner is now in charge of the field, since Jim Ray went to Europe. He and the boss, H. F. Pitcairn, together with G. S. Childs, the new general manager, hopped off, (by boat) for France, England, Germany, Holland and other points east, on Oct. 2. They propose to fly around Europe noting how the airlines are operated over there, and will be back late in November. This is Jim Ray's first transatlantic tour, and the operations crew gave him a send-off with their best wishes that he might have a nice time and get good and seasick. However, an old navigator like Ray, who has flown almost everything that has wings, will probably get very little kick out of a life on the ocean wave.

Towner, N. D. (Jake's Airport)

By Jake Bertram

Vince Bertram, one of the Bismarck airmen, dropped in Sept. 28 to take on a little gas and some nourishment for himself and Horace Atkinson, who has been with Vince for the last month. The boys have been barnstorming for a couple of weeks and were enroute home. The recent wet weather has checked the activities of the field, and it gave the boys time to do a little dolling up on the planes.

Bill Leaches' Canuck is in the air again after the recent battering it received from a real hail storm. We got busy and gave it some new linen and it looks fine now. Pilot Harris is busy giving Jake Bertram and Bill Leach training. Jake is getting ready to solo and has got his landings down to six points, but has hopes of cutting it down to three. He handles his Hisso-Standard well. Bill is getting acquainted with his Canuck and makes good turns.

Chet Jacobsen, of Minot, who has been flying more or less out of our airport this summer, has accepted a position as pilot with the new contractors of the Minneapolis-Chicago Mail, and started his duties Oct. 1. We all wish Chet the best success and many happy landings.

On Sept. 28, when Vince flew in with his Standard, all the boys thought it was Casey Jones, as Vince has the fuselage rounded out and painted yellow or orange.

Our field is getting in better shape right along and we should have one of the best landing fields in North Dakota. It consists of over 100 acres and is open country on all sides, being one mile from the center of our little city and very easy to get to with a car.

We have hopes of inducing the Minneapolis Tour, headed by Marvin Northrop, of Minneapolis, to make Towner one of its stopping points the latter part of this month.

United States Air Forces

Air Corps Training Center at San Antonio

The Department of War has issued General Orders No. 18 as follows:

Air Corps Training Center. 1. There will be established and maintained at San Antonio, Tex., an Air Corps Training Center consisting of the following activities:

a. The Air Corps Primary Flying Sheool, Brooks Field, San Antonio, Tex.

b. The Air Corps Advanced Flying School, Kelly Field, San Antonio, Tex.

c. The School of Aviation Medicine, Brooks Field, San Antonio, Tex.

2. The Air Corps Training Center will be exempt as prescribed for the activities listed in paragraph 4b, AR 17-10.

3. Pending publication of Army Regulations governing the Air Corps Training Center, the duties of the commander thereof will be such as may be communicated to him by the War Department.

National Guard activities in Porto Rico.—1. Transfer of control of certain activities.—The powers held by, the duties required of, and the authority vested in the commanding general, Second Corps Area, relative to the National Guard activities in Porto Rico specified below are transferred to the commanding officer, United States troops in Porto Rico, who will be responsible to the commanding general, Second Corps Area, for the proper administration of such activities, subject to the requirements of Army Regulations, National Guard Regulations, and the orders and policies of the War Department and of the commanding general, Second Corps Area. The following are the activities so transferred:

a. Armory inspection, to include—

(1) Detail of inspecting officers.

(2) Review of inspection reports.

(3) Recommendation for remedial action.

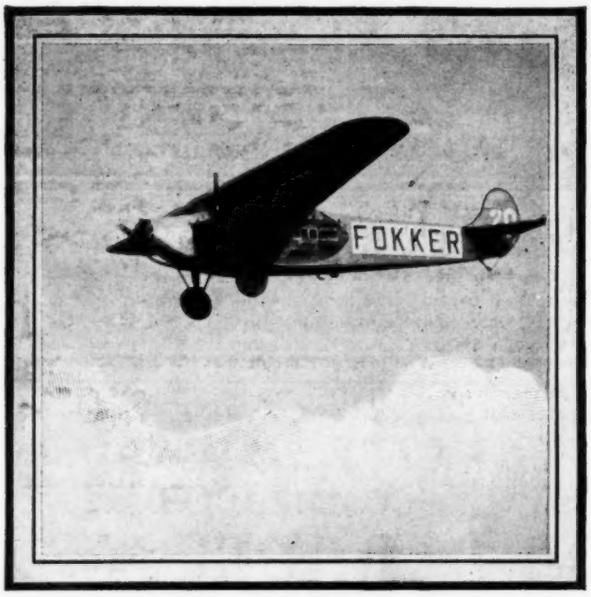
b. Field inspection, to include (1), (2), and (3) of above.

Reserve Officers Complete Training

The third class of Reserve Officers, Air Corps, to be trained at Fort Sam Houston, Tex. during the present season, numbering 23, completed their two weeks' course of training on Aug. 30. With a few exceptions, they were all members of inactive pursuit units and held flying ratings, as follows: airplane pilots, 10; junior airplane pilots, 11; and only two non-rated officers, who are members of inactive service squadrons. Their names are as follows: Major Fred Feasel of Albuquerque, N.M.; Major Bernard Cummings, Craig, Colo.; Capt. C. W. Childress, Jr., 1st Lieuts. J. B. Jaynes, W. S. Moore, 2nd Lieuts. McK. F. Clark and J. B. Watson, Fort Worth Tex.; 1st Lieut. J. R. Caldwell, Denver, Colo.; Capt. L. C. Geisendorf, Eastland, Tex.; 1st Lieut. E. E. Peake and 2nd Lieut. T. J. Parks, Corsicana, Tex.; 1st Lieut. W. A. Black, Dallas, Tex.; 1st Lieut. F. E. Haddon, Mercedes, Tex.; 2nd Lieut. A. R. Malloy, Palestine, Tex.; 2nd Lieut. A. LeR. Whittaker, Stephenville, Tex.; 2nd Lieuts. F. D. Wood and A. T. Economy, Duncan Field, Tex.; 2nd Lieut. C. F. Harkey, Katimcy, Tex.; 2nd Lieut. R. N. Huget, Houston, Tex.; 2nd Lieut. W. P. LeBreton, Alamagordo, N. M.; 2nd Lieut. H. W. Hantsche, El Paso, Tex.; 2nd Lieut. D. Bartle, Phoenix, Ariz.; and Lieut. C. B. Cheese, Elbert, Colo.

The progress made by all Reserve Officers under training at Fort Sam Houston was eminently satisfactory, and the eagerness and enthusiasm with which all worked, ground as well as air, was a source of much gratification to the regular officer personnel under whose instruction all training was done.

The scheme of instruction in use at Fort Sam Houston this season has proved to be the best heretofore used. Each officer, upon arrival, was assigned to duties in addition to his regular training, such as Supply Officer, Engineering Officer, Parachute Officer, Mess Officer, Operations Officer, Adjutant, etc.,



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and was required to so study his work that in case of an emergency he would be capable of filling the position in which trained.

Navy Conducts Goggles Experiments

Experiments looking to the development of a new type of goggles to prevent "aviator's blindness" are being conducted at the Brooklyn Navy Yard and Rockaway Beach by C. E. Fraser under the direction of Commander V. V. Woodward.

In solving the complex problem of protecting the eyes of fliers not only a new variety of glass but new mountings also must be developed, according to Mr. Fraser. It is probable that the glass used will be yellowish green, to cut out the light rays to which the human eye is most sensitive, and the glass must be of high quality to prevent distortion. Even a slight degree of distortion, Mr. Fraser explained, may cause errors in the aviator's view of the ground on which he is about to land and cause him to crash. Distortion, also is a problem in military aviation, because it may cause inaccuracies in the report of an observer flying over enemy terrain.

The navy experiments have been inspired by the difficulty experienced by Commander Richard E. Byrd, who flew to the North Pole last Spring. Commander Byrd suffered acutely from snow blindness caused by the glare of reflected light. But even where there is no snow, Mr. Fraser said, aviators' eyes suffer, because light strikes them from below as well as above, and strikes a portion of the retina not used to strong rays.

Record Free Balloon Flight

It was announced on Sept. 28 at the Bureau of Aeronautics, of the Department of the Navy, that what is believed to be the longest flight ever made by a free balloon has been called to the attention of the Bureau.

A report had been received at the Bureau that a boy living near Manchester, Mich., sent up a free balloon while attending a picnic near that place. He attached a note to the balloon requesting that the finder notify him of the place it was recovered.

A few days later the youth received a message from Glendale, Calif., notifying him that the balloon had been found there.

Naval Planes Active in Hawaii

Planes attached to the Naval Air Station, Pearl Harbor, T. H., have been doing some active flying. V-T-Squadron 19 has been engaged in torpedo approach practice, while planes attached to VP-Squadron No. 14 have been used for flights to Kauai to familiarize pilots with operating facilities around that island, and the VJ-Squadron has been making cross-country and photographic flights.

Vast improvement has been made in the landing field at Pearl Harbor by the daily use of the power roller borrowed from the Army at Luke Field.

Army Air Orders

Sec. Lieut. Herbert Roy Hare, Air Corps Res., Worchester, Mass., to active duty, Middletown air intermediate depot, reverting to inactive status Oct. 17.

Sec. Lieut. Harian Yager Smith, Air Corps Res., Wilkinsburg, Pa., to active duty McCook Field, reverting to inactive status Oct. 17.

Following officers Air Corps, relieved from assignment and duty at the place specified, and will proceed to Chanute Field and report to the commandant of the Air Corps Tech, Sch., for course in photography: First Lieuts. Harvey K. Greenlaw, Brooks Field, Guy H. Gale, Fort Sam Houston, Ulysses G. Jones, Bolling Field, Lloyd G. Blackburn, Langley Field, and Sec. Lieut. Harold G. Peterson, Chanute Field.

Following officers of Air Corps, relieved from assignment and duty at place specified, and will proceed to Chanute Field, and report to commandant Air Corps Tech. Sch., for the purpose of taking course in communications: First Lieut. Henry G. Woodward, Kelly Field, Sec. Lieuts. Linus D. Frederick, Brooks Field and Ralph H. Lawter, Bolling Field.

First Lieut. Albert J. Clayton, Air Corps, Chanute Field,

to Scott Field.

Staff Serg. Adam J. Vielock, Air Corps, Fort Crockett, transferred in grade of staff serg. to 60th Sch. Squad., Air Corps, Kelly Field.

Staff Serg. George B. Raymond, Air Corps, Kelly Field, transferred in grade of staff serg., to 60th Serv. Squad., Air Corps, Fort Crockett.

First Lieut. Harry G. Montgomery, Air Corps, relieved from assignment and duty office of Chief of Air Corps, and will proceed to Fairfield air intermediate depot.

Capt. Robert G. Ervin, Air Corps, Omaha, to Washington, reporting to Asst. Sec. of War. for duty.

First Lieut. Alonzo M. Drake, Air Corps, Washington, to McCook Field.

First Lieut. Malcolm S. Lawton, Air Corps, Washington, to Fairfield air intermediate depot.

The following officers, Air Corps, to stations indicated, upon completion of tour of foreign service: First Lieutenants Mark H. Redman, Fairfield, Stanley M. Umstead, Mitchel Field, Samuel P. Mills, McCook Field, Robert T. Zane, Kelly Field, James Flannery, Wright Field and Major Junius W. Jones, Langley Field.

Capt. Lawrence P. Hickey, Air Corps, Chanute Field and First Lieut. Donald L. Bruner, Air Corps, McCook Field. to New York City, sailing Dec. 22, via Government transportation, for the Phillipine Islands.

Major Paul T. Bock, Air Service, Chanute Field, and First Lieutenants Malcolm N. Stewart, Air Corps, Fairfield, and Clarence F. Horton, Langley Field, to New York City, sailing Mar. 2 for the Canal Zone.

First Lieut. Vincent J. Meloy, Air Corps, Nashville, to New York City, sailing Dec. 22, via Government transportation for Philippine Islands.

Capt. Walter Bender, Air Corps, Fort Sam Houston, to Mitchel Field.

First Lieut. Earl S. Schofield, Air Corps, Scott Field, to Langley Field.

Major George E. A. Reinburg, Air Corps, on temporary duty at headquarters, Seventh Corps Area, Omaha, relieved from further assignment and duty Chanute Field, and will report to commanding general, Seventh Corps Area, for assignment with Air Corps.

Capt. George Ralph Gaenslen, Air Corps Res., San Antonio, to active duty, San Antonio air intermediate depot, reverting to inactive status Oct. 17.

Sec. Lieut. Vincent Joseph Esposito, Air Corps, transferred to Corps of Engineers. Lieut. Esposito is relieved from attachment Sec. Div., Fort Sam Houston, and is assigned to Engineers, First Div., Fort Dupont.

First Lieut. Lester J. Maitland, Air Corps, Wright Field, to Washington.

First Lieut. Roscoe C. Wriston, Air Corps, Fort Sam Houston, to Kelly Field.

Capt. Louis McComas Young, Air Corps Res., Long Branch, N. J., to active duty McCook Field, reverting to inactive status Oct. 24.

Navy Air Orders

Lieut. Comdr. Harold T. Bartlett det. Nav. A. Sta., Pensacola, to Bu. Aero., Navy Dept., and additional duty fitting out PN-10 planes.

Ensign Albert R. Linholn det. Nav. A. Sta., Pensacola, to U.S.S. Charles Ausburn.

Lieut. (jg) George C. Crawford det. Nav. Air Sta., Pensacola, to USS Reno.

Lieut. (jg) John V. Peterson det. VJ Sqd. One, Aircraft Sqdns., Battle Flt., to USS Colorado.

Ensign Roland V. Baillie det. Nav. A. Sta., Pensacola, to USS Charles Ausburn.

Marine Corps Air Orders

Sec. Lieut. A. V. Gerard relieved from aviation duty at N.A.S., Pensacola, and assigned to duty at the M.B., N.A.S, Pensacola.

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PUBLISHER'S NEWS LETTER

Occasionally a criticism of the ideas advocated on this page is so well phrased that it stimulates thought if it does not convince. The letter that follows by its opposition to what we conceive to be a sound policy of regulation for the first year makes our position all the clearer and is printed for that reason. If regulation abroad had abolished accidents, we would be as favorable to strict rules as the writer of the letter. But they haven't and no regulations ever will do this, although some credulous people still cling to this fond hope. The remainder of this page is devoted to our critic's letter—L.D.G.

• • •

A tentative draft of regulations for aircraft under the Air Commerce Act of 1926 having been recently issued by the Department of Commerce, sets in motion a discussion of many interesting and vital subjects relative to the question of regulation. "L.D.G.", in "Publisher's News Letter", AVIATION, p. 570, (September 27, 1926) makes the following contribution:

"Aviation has always believed in the most simplified and lenient form of regulation while aeronautics is in the formative state. The experience in England with drastic regulatory measures has produced a deplorable condition. This country will do well to learn from the experience of others rather than from any action that may tend to set back air development at a time when hopes are so bright."

There are ideas expressed in the above quotation which would seem to bear a little scrutiny. No doubt Aviation is entitled to its own belief. It is a worthy institution, worthy of beliefs and opinions. But the worthiness of the institution is of such proportions that it becomes a matter of quasi-public concern, within the family of the air at least, as to just what the beliefs, and creeds, of Aviation are.

Should there be simplified air control?

Simplified may be construed to mean almost lack of control; laissez faire, in-so-far as the Federal Government is concerned; an amplification of the State's Rights theory.

But how can such a policy be consistent with the law now on the statute books? "The Secretary of Commerce *shall* by regulation provide, etc." There are no doubt lawyers to be found who will demonstrate to the satisfaction of their clients, and some others, that the above "shall" means not "shall" or "may". However we may ask ourselves, "What is the plain meaning of the term?" "What is the spirit of the law?" "Would we respect any other position on the part of the Federal Government, than the one indicated here, namely a determination to give the law effect?" And even though we did not as individuals, citizens, and whatnot, question ourselves thusly it is to be presumed that the Secretary of Commerce might find himself without support of conscience, at least, if he did not attempt to regulate flying in accordance with the provisions of the law.

If flight is to be controlled by the Federal Government should it be done in a half-hearted manner? Would the good of the industry and of the public be best served by a winking attitude on the part of the Department of Commerce officials? What has caused a disrespect for local government of late? Nothing more, it may be ventured, than this same spirit of eye-resting, buck-passing, and law-unenforcement. In the State of California there is a comprehensive law regulating flying. Pilots are supposed to pass certain tests. Flying equipment is supposed to undergo periodic inspection. If there is any enforcement at all of the letter of this law it is most perfunctory. During the past month there have been several fatal crashes in California, not on the Federal-controlled air mail lines, but under conditions supposed to be regulated by the State law. This condition is not peculiar to the Golden State. Daily reports of the press tell us that people are still being killed in the air. And the same rule seems to be good for the entire country, that the trouble is not with the nationally controlled airlines, but with the local or aerial service operator, flying most of the time under the exclusive jurisdiction of the State authority.

Senator Bingham recently said in effect: "We have got to quit lying about aviation!" That statement should be deeply impressed upon the minds of airmen. We are growing up in this industry and as we approach maturity we must face the responsibilities of manhood. If the air is not safe, not as safe as it should be, we had better entrust the policing of our skies to the authority that has proven to be capable of the job. What does it matter if a few irresponsible operators and their obsolete machines are put out of business? Has the contribution of this class of aviator been so great as to justify the placing of human life in constant jeopardy? Decidedly not. It is time that the killings should cease, no matter who is put out of employment. If the aviator is competent he will be able to secure finance with which to purchase standard equipment.

Attention is called to the "deplorable condition" in England. How does England stand on safety? She may have fewer operators than the States but the air development in that country is at least responsible. Passengers can take to the air in England, if at all, in protected aircraft. Let us not hamper the Department of Commerce in its efforts to give us safer flying.

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INDEX TO ADVERTISERS

Advance Aircraft Co. ... 675
Aero Supply Co. ... 682
Aircraft Service Directory ... 692-693-694
Alexander Aircraft Co. ... 684
American School of Aviation ... 683
Arthur & Co., Inc., William E. ... 693

Boston Newswriting Service ... 694

Chicago Aeronautical Service ... 692
Classified Advertising ... 691
Cleveland Tool & Supply Co. ... 692
Crawford Airplane & Motor Co., Inc. ... 693
Curtiss Aeroplane & Motor Co. ... 696

Decatur Aircraft Co. ... 694
Detroit Aero Motors Co. ... 694

Hall, Inc., Chas. Ward ... 682
Hamilton Aero Mfg. Co. ... 692
Hartzell Walnut Propeller Co. ... 692
Haskelite Mfg. Co. ... 693
Huff-Daland & Co. ... 693

Ireland, G. S. ... 693

Johnson Motor Products Co., Inc. ... 692

Kreider-Reisner Products, Inc. ... 692

Logan Co., Floyd J. ... 693

Monumental Aircraft Co. ... 692

National Aeronautic Association of U.S.A. ... 681
Nicholas-Beazley Airplane Co. ... 692

Ostergaard Aircraft Works ... 693

Phenix Aircraft Products Co. ... 693
Perry-Austen Manufacturing Co. ... 686
Pioneer Instrument Co. ... 692
Pratt & Whitney Aircraft Co. ... 677
Polachek, Z. H. ... 694

Rand-McNally & Co. ... 685
Roberston Aircraft Corp. ... 680
Roosevelt Aero Service ... 693
Reed, S. A. ... 693
Ryan Airlines, Inc. ... 681

Scintilla Magneto Co. ... 663
Service Steel Co. ... 693
Southern Airways, Inc. ... 692
Summerill Tubing Co. ... 686

Taylor, C. Fayette ... 694
Tips & Smith ... 693
Titanine, Inc. ... 681

Vacuum Oil Co. ... 662
Van Schaack Bros. Chemical Works, Inc. ... 684
Vinoway ... 694

Wallace Aero Co. ... 692
Wallace Aircraft Co. ... 693
Weis, Geo. A. ... 692
Where to Fly ... 689-690
Wood Elastic Web Co., J. W. ... 684
Woodson Engineering Co. ... 683
Wright Aeronautical Corp. ... 664

Yackey Aircraft Co. ... 693

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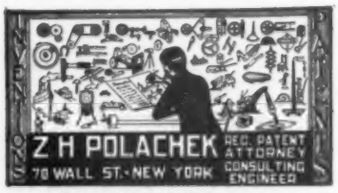

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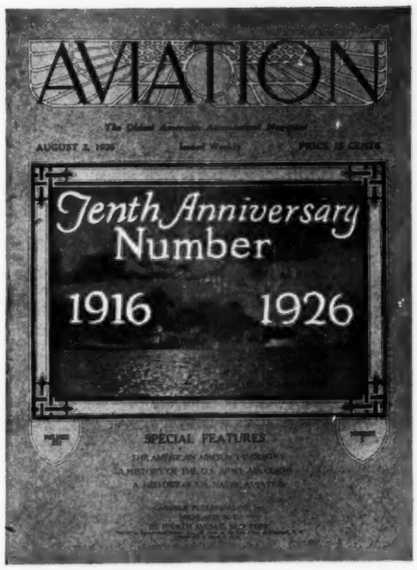

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